British Birds

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Three Shillings

January 1960

British Birds

AN ILLUSTRATED MONTHLY JOURNAL

Edited by
P. A. D. Hollom
E. M. Nicholson I. J. Ferguson-Lees
S. Cramp
Photographic Editor: Eric Hosking
Editorial Address: 30 St. Leonard's Avenue, Bedford

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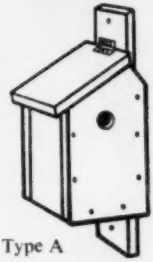

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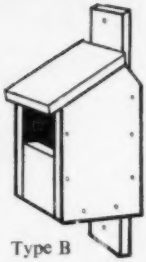

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British Birds

VOL. 53 NO. 1
JANUARY 1960

Editorial

IT IS NOW NINE YEARS since the early loss of Bernard Tucker, so soon after he had succeeded Harry Witherby in the editorship, faced *British Birds* with the most severe crisis of its existence. The editorial continuity, so vital for the maintenance of the character and standards of the journal, had almost been broken. At the same time rising costs and adverse conditions for all periodicals had to be weathered, while the task of keeping abreast of the mounting flood of ornithological output was threatening to become impossible.

In response to this daunting challenge the newly re-formed editorial team rallied to the standards and traditions which Harry Witherby had laid down, but sought to harmonise them with the vigorous new forces prominent in post-war ornithology. A close working understanding was reached with the British Ornithologists' Union regarding additions to the British List, and with editors of county reports concerning the criteria for accepting sight records of rarities. The policy of publishing bird photographs of exceptional subject interest and high technical standard was further developed under the talented guidance of George Yeates. Prominence was given to the work of bird observatories, whose flourishing condition owed much to one of the new members of the editorial board, W. B. Alexander. Stimulated by the robust common sense of Arnold Boyd, the team put up a pretty successful resistance against the encroachment of jargon and unnecessary technicalities. Reviving interest in European ornithology (arising in no small part from *A Field Guide to the Birds of Britain and Europe*, of which P. A. D. Hollom was a joint author) led to the enlistment of a growing band of eminent Continental contributors from Scandinavia round to Spain.

The editorial team of the "fifties", however, despite its not inconsiderable achievements, must frankly recognise that it has not proved strong enough to do all that was required of it. Even though I. J. Ferguson-Lees was enabled to retire from teaching and devote his

whole time to the executive editorship, the scale and multiplicity of editorial tasks and correspondence has far outrun and constantly tended to swamp the combined capacities of the team. Its age composition and geographical dispersion have to a serious extent weakened the board by preventing it from meeting as a whole. Inability to raise circulation correspondingly with increasing demands from many quarters for unpaid services and advice has proved a chronic handicap. Successive printing trade difficulties have added severely to the strain, and have contributed their quota to recurrent lateness in publication.

The time has therefore come for a radical overhaul, and with the opening of 1960 a series of important changes are coming into effect. Very fortunately a further rise in subscription rates is not one of these: despite the costly new settlement in the industry, the necessity for passing on higher production costs to readers has been averted. Subscribers will continue to receive the twelve monthly issues plus the additional annual Ringing Number for £2 a year, including postage and dispatch. The only change in this direction will be that a simplified brief index will be included with the December issue, as in pre-war years, while the fully detailed index will in future be obtainable separately at a price of 5s. annually.

Hitherto *British Birds* has been printed for the publishers, H. F. & G. Witherby Ltd., by the associated printing firm Witherby & Co., even though this has sometimes meant latterly that for technical reasons part of the setting might have to be done in London and the rest in Watford. The publishers have now proposed, and the editors have agreed, that it would be more convenient to have all the printing done closer to the executive editor's office and, accordingly, *British Birds* is now being wholly produced in Bedford by Diemer & Reynolds Ltd. We cannot let this occasion pass without a tribute to the loyal and skilled service rendered over half-a-century by Witherby & Co. as printers. The exceptionally high and dependable standard of the photographic plates has often been praised in many countries, and is indeed held by some well-informed judges to be the highest in any ornithological journal in the world. Perhaps less widely appreciated, but in its way no less remarkable, has been the typographical skill demonstrated in such peculiarly exacting achievements as the setting of the annual Ringing Report. There seems no room for doubt that the new partnership, which we welcome, will bring increased convenience, closer contact and improved speed of production which is all-important for giving better service to our readers. In embarking on it we express our thanks and appreciation to Witherby & Co.

One of the immediate effects of the change is to enable certain improvements, or so we hope they will be judged, to be carried out in

the form of the journal, as we propose in future to call it, the word "magazine" no longer being generally understood as describing this type of periodical. Readers will notice that the new type allows significantly more separation between the lines to make for easier reading, and other minor changes, without radically departing from tradition, are designed to keep it abreast of modern practice: for example, instead of being LIII this new volume is 53. The new layout of the plates, too, allows bigger and more attractive reproductions.

At the same time, a series of new measures have been adopted to enable the editors to cope with the ever-increasing mass and complexity of ornithological material. The first of these reinforcements, already described in the August 1959 issue (*Brit. Birds*, 52: 240-244) is the new Rarity Records Committee. Unfortunately we have lost the services of one of the original ten members, H. P. Medhurst, who has now gone abroad. His advice will be missed, but he is to be succeeded by I. C. T. Nisbet—so that the Committee now consists of P. A. D. Hollom, H. G. Alexander, D. D. Harber, A. Hazelwood, I. J. Ferguson-Lees, Prof. M. F. M. Meiklejohn, Dr. I. C. T. Nisbet, Major R. F. Ruttledge and Kenneth Williamson, with G. A. Pyman as honorary secretary and compiler of the annual national rare birds report. No one who has not experienced the impact of the vastly increased sight records of rarities can appreciate the strain under which the well-tried system which was good enough until the last few years has entirely broken down. The new one will, we are confident, not merely equal but in several ways easily surpass the best standards of treatment of such records attained with the much less copious flow of the past, and will enable the arrears of publication which have recently been so distressing to be eliminated.

There are, however, many important notes which do not relate to rarities, and these also present increasing editorial difficulties with the growing body of relevant literature on each specialised aspect of ornithology, and the more advanced and sophisticated methods and topics of observation now current. Accordingly, to assist over this important and widely read department of the journal, a corresponding team has been created—consisting of P. A. D. Hollom, Stanley Cramp, I. J. Ferguson-Lees, Derek Goodwin, Dr. I. C. T. Nisbet and Dr. N. Tinbergen. The editors trust that by this means the number and value of the notes will be increased.

Among other objects, both these developments are designed to carry a long step further the policy of spreading the editorial duties and delegating responsibility to a wider and predominantly younger group representative of different parts of the country and different approaches and lines of study, including amateur and professional ornithologists together. Even if there were still a Harry Witherby, one-man direction

is no longer a possible basis for coping with modern ornithological output, and the best alternative is to bring together and rely on a balanced team of varied ages and outlooks, from which the necessary talent and experience to make good losses and to meet emergencies and new burdens can be found as they are required.

The logic of this approach calls for readiness among the members of the editorial board to bring in new blood and give fresh opportunities for acquiring experience, without waiting until some tragedy compels it. Accepting this situation, and the importance of enabling the responsible board to meet freely and frequently as a body in future, a number of changes in its composition take effect from the New Year. E. M. Nicholson, who assumed the responsibility of senior editor at short notice in order to cope with the emergency resulting from the death of Bernard Tucker, now hands over to P. A. D. Hollom, in effect changing places with him and remaining on the editorial board as an ordinary member. A new status of honorary editor is created in recognition of the position of those editors who are now prevented by age or infirmity from travelling, and cannot therefore participate in the active duties of the editorial board, namely Dr. N. F. Ticehurst, whose fiftieth year of editorial association we commemorated in last June's issue, and W. B. Alexander. It would be impossible to permit that their much valued connection with *British Birds* should be broken, and they will continue to be consulted from time to time, while being relieved of responsibility for the day-to-day editorial tasks. At the same time George Yeates, owing to his business commitments, has regretfully asked to be relieved of his duties as photographic editor, and, with the warm thanks of his colleagues for his unfailing helpfulness, is succeeded by Eric Hosking who needs no introduction and has indeed long been a principal contributor to the pictorial pages. The need for a new editor readily available for consultation on the spot and able to take responsibility for a block of editorial work has long been felt and will be met by the appointment to the editorial board of Stanley Cramp, chairman of the Scientific Advisory Committee of the British Trust for Ornithology and well known for his bird census and other studies.

It seems unnecessary to describe here other consequential or domestic changes of a secondary nature. The steps now taken have been carefully thought out in order to give better service to our subscribers and to ornithology. We hope they will enjoy the support of our readers and contributors.

E.M.N.

The height of bird migration

By David Lack

Edward Grey Institute, Oxford

INTRODUCTION

MIGRATING BIRDS cannot be seen when they are high above the ground by day, even with military optical equipment (Sutter 1950), and means have not yet been found for accurately assessing the height of night-migrants seen by telescope against the face of the moon (Lowery 1951). Moreover, small birds, and even large ones, are extremely hard to see from a fast-moving aircraft. Most records of birds seen from aircraft have been below 4,000 feet (Mitchell 1955, 1957), though large birds occasionally, and small birds very rarely, have been observed at around 10,000 feet above the ground (Hürzeler 1950, Meinertzhagen 1955, Miller 1957). Only with the new technique of radar has it become possible to obtain a true assessment of the height of migration. By this means, Sutter (1957) found that nearly all morning movements in Switzerland occurred less than 800 metres above the ground, though occasionally up to 1,300 metres. On morning and evening movements above Hertfordshire, migration was commonest at 2-3,000 feet, frequent up to 5,000 feet and very infrequent above 10,000 feet, the highest birds being at 13,000, 14,000 and 16,000 feet (Harper 1958), while records of a similar nature were obtained above Worcestershire (Houghton and Coultas 1959).

At intervals from October 1958, I have through the courtesy of R.A.F. Fighter Command obtained many heights for bird migrants over Norfolk and over the North Sea off Norfolk, by means of a new, much more powerful and more accurate height-finder than those previously in use in Europe. It was operated in conjunction with a plan-position display on which, as discussed elsewhere (Lack 1959), bird-echoes are readily recognised, and I am confident that all the echoes on the height-finder here attributed to birds in fact came from them, most from Passerines and some from waders. On both types of equipment, wader echoes are larger than those from Passerines and are further recognisable on the plan-position display by their faster speed and by their manner and times of occurrence. Because of its high power, the new height-finder is specially useful for recording parties or even single birds at great heights. However, where echoes from Passerine birds are numerous, as is normal at low heights, they merge with each other and cannot be counted separately. Further, birds flying close to the ground are not usually detected by radar.

Hence the mean height of Passerines could not be assessed, though it was possible to calculate this for some wader movements because of their widely spaced echoes and the fact that none was low.

OBSERVATIONS

In late October and early November 1958, with light winds, there were big westward arrivals in Norfolk, from the direction of northern Holland, of birds which had obviously left the Dutch coast during the night or the first part of the morning. The echoes were characteristic of Passerine birds of moderate size, and the commonest species were probably Starlings (*Sturnus vulgaris*) and Chaffinches (*Fringilla coelebs*). Many Blackbirds (*Turdus merula*) also arrived in Norfolk in this period, but whether westward from Holland or southwestward from Scandinavia, or both, is not certain. On the westward movements, all the echoes were normally at or below 3,000 feet above the sea during the morning departures, and this also held during some of the nocturnal movements, though on other nights they were frequent up to 4,000 feet. Early on one morning there was a gap between the last nocturnal departures and the first morning ones, the birds that left Holland during the dark extending to 4,000 feet but those that left by day reaching only 3,000 feet.

In late October and early November 1958 there were also southwestward arrivals in the early morning, presumably of night-migrants from Scandinavia. The echoes were again typical of moderate-sized Passerine birds, and the commonest species were probably Redwings (*Turdus musicus*) and Fieldfares (*T. pilaris*), and perhaps also Blackbirds. During these movements, heights commonly extended to 7,000 feet, with a few at 8-10,000 feet and one at 11,000 feet, and similar heights, again including one at 11,000 feet, were obtained during one small evening arrival from the same direction, presumably of birds that left Scandinavia around dawn. Hence the Scandinavian migrants travelled higher than those from Holland, but further study is needed to determine whether this was because different species, chiefly thrushes, were involved, or because the Scandinavian birds had travelled for 400 instead of 100 miles over the sea.

Many height-records were also obtained when the same species of winter visitors left Norfolk in late March and the first half of April 1959. Although a mean height could not be obtained, it was possible on seven mornings to determine the most frequent height: three times this was around 2,000 feet, once 2-3,000 feet, once around 3,000 feet, twice around 4,000 feet and once around 5,000 feet. Hence if, as seems almost certain, these were the same species that arrived in Norfolk on October mornings, they tended to travel higher in the spring. This view is supported by the fact that in Norfolk much more diurnal

migration is low enough to be visible in autumn than in spring. Of over 700 individual height-records on spring mornings in 1959, about three-quarters were below 4,500 feet, but the true proportion must have been decidedly larger, owing to the merging of echoes at lower heights. On half the mornings watched, there was at least one bird as high as 9,000 feet, and I obtained a few records at 10,000, 11,000 and 12,000 feet, but some, and perhaps all, of these birds might have been individuals that set off during the night and had not yet descended.

In the same period of the spring, at night between 20.00 and 21.00 hours, echoes were usually so crowded that it was not possible to assess the most frequent height, though almost certainly this was at or below 5,000 feet. Occasionally echoes extended in a dense mass up to 9,000 feet, while on nearly half the nights watched there was at least one individual at 13,000 feet; the highest bird was at 14,000 feet. Hence the birds travelled rather higher by night than by day in spring, and decidedly higher by night in spring than by night in autumn.

I obtained many more height-records during the first three weeks of September, 1959, these being on very small night-migrants, presumably warblers, flycatchers and chats. Each night there was a big departure, heading SSE over the land, of birds giving very small echoes, and by 21.00 hours the highest individuals had usually reached 10,000 feet, twice 13,000 and once 14,000 feet above the ground—heights comparable with those obtained on the larger Passerine species departing eastward in spring. As in spring, mean heights could not be obtained, but most individuals were below 5,000 feet.

Around sunrise each day in September, there was also a regular arrival of birds from the sea giving very small echoes and heading about SSW, these presumably being warblers, chats and flycatchers that had left Scandinavia during the first part of the night. On sixteen mornings watched, most echoes were below, and perhaps well below, 6,000 feet, but each day a thin scattering of echoes extended fairly uniformly above this up to at least 15,000 feet, while on seven mornings the greatest height was 19,000 feet and on two mornings it was 21,000 feet. With an exceptionally large arrival on 14th September, at 06.00 hours, I recorded 13 individuals at 19,000 feet, 9 at 20,000 feet and 3 at 21,000 feet, while one hour before midday, when the movement was still continuing, though less densely, there were at least 5 birds at 19,000 feet, 2 at 20,000 feet and 3 at 21,000 feet (which must have been different individuals from those seen five hours earlier). I devoted only a short time each morning to heights, and since in these periods I recorded 30 birds at or above 20,000 feet, this cannot be very unusual; indeed, there may possibly have been some above 21,000 feet, since I made no special search to find exceptional birds. The weather throughout the period of these watches was fine and anti-

cyclonic with moderate northeasterly following winds, that is, it was typically favourable weather for migration at this time of the year.

On September evenings in 1959 I also obtained heights on wader-type echoes travelling west. These birds had evidently left the Dutch coast in the late afternoon and early evening. Probably most were Lapwings (*Vanellus vanellus*), which are often seen coasting west in north Norfolk at this time of year, but during one movement, with a sudden shower, I heard Curlew (*Numenius arquata*) calling overhead in the dark. Typically, Lapwing and Curlew migrate in compact parties, in which the individual birds are so close to each other that each party would give only one echo on the radar display. But the individual echoes were sufficiently far apart to allow the height of each party to be estimated separately, and hence a mean height could be calculated. Whereas in Passerine movements the height-records were normally spread fairly uniformly over a number of thousands of feet, in each wader movement nearly all the echoes were grouped within some two thousand feet of each other, thus giving a different pattern on the display, in the form of a band of echoes with sharp boundaries both above and below. On one occasion nearly all the records were around 3,000 feet and on another at 5-6,000 feet (mean 5,800 feet), while on the two days when the largest totals were recorded, the mean of 104 echoes on 14th September was 4,700 feet and of 42 echoes on 17th September was 3,500 feet. These differences in mean height on different days were statistically significant. Above the main block of echoes there were a few rather higher ones, which on some days extended up to 8,000 or 9,000 feet while once there was one at 11,000 feet. A similar picture was obtained by W. R. P. Bourne on Lapwings moving west from Holland into Suffolk in June 1959 when, on both diurnal and nocturnal movements, nearly all the echoes were between 4,000 and 8,000 feet, with on some days a few up to 10,000 feet.

Only once did I obtain height-records of small migrants, presumably Passerines, similar to those regular in Lapwings. In the early mornings in April 1959 there was often a northwestward movement of birds giving small echoes, arriving in east Norfolk and Suffolk from the southern North Sea, presumably small Passerine night-migrants from about Belgium. On the early morning of 3rd April 1959, but on no other occasion, 75 out of 93 heights obtained on this movement were at 4,000-4,500 feet, 10 more were around 5,000 feet and the rest a little higher, while none was below 4,000 feet. Hence the height-echoes formed a concentrated band. The meteorologist at an airfield in the area reported a bank of fog, the upper limit of which was estimated to be at 4-5,000 feet, and the northwestward immigrants evidently continued their flight inland just above this. Sutter (1957) recorded similar movements above fog in Switzerland and, like me,

did not otherwise observe a sharp cut-off in height-records where Passerines were involved.

DISCUSSION

Most migration occurs a very few thousand feet above the earth's surface, and this was the height to be expected on general grounds, for in most areas it is high enough to keep the birds clear of a rise in the terrain and above ground mist. But one would not expect migrants to climb higher than necessary for their safety, since climbing involves the expenditure of energy. Further, at high altitudes their efficiency might be reduced by the lower oxygen pressure and by cold. In addition, the wind is stronger higher up, and since migrants do not normally wait for a following wind, a strong wind must in general be disadvantageous. Finally, once a migrant is aloft, it is advantageous for it to maintain a steady height, since any altitude lost must be regained.

Hence the first question suggested by the present observations is how migrants maintain their height. The experience of airmen indicates that it is extremely hard to maintain a constant height by visual means under any conditions, and particularly over the sea and at night. It may therefore be wondered whether migrant birds depend on purely visual means, or whether they may have other means of telling their altitude and perhaps even a special adaptation for this purpose. The present observations suggest that, whatever means may be used, migrating Lapwings assess their height above the sea at night more precisely than Passerine winter visitors to Britain, while the latter are less variable than the smaller Passerine summer visitors to northern Europe. Incidentally, if migrants can maintain a fairly constant height, one wonders what they do in those areas where they meet a mountain barrier, such as the Pyrenees which rise within a few miles by over 10,000 feet.

Secondly, man experiences discomfort from the reduced oxygen pressure above about 12,000 feet, and he is seriously incommoded in his muscular effort at 20,000 feet, where it is also very cold. Yet the latter height was occasionally attained by very small Passerine night-migrants. Do these migrants suffer from high altitude like man, or have they special adaptations? It should be stressed, however, that only a very small proportion of migrants occur at such heights.

Thirdly, the occasional occurrence of small Passerine night-migrants at 20,000 feet raises the possibility whether some of the rarities which reach Britain in September have arrived at this height. Since the wind is usually stronger higher up, they would drift faster higher up than lower down. This, however, is speculative, and it should be added that with easterly winds and anti-cyclonic weather, when most eastern

rarities occur in Britain, the rise in wind-speed with height is not usually great up to 20,000 feet.

SUMMARY

(1) The common Passerine winter visitors to Britain migrate mainly below 5,000 feet. They tend to fly higher in spring than autumn, and higher by night than by day. Occasional individuals were recorded up to 14,000 feet.

(2) Very small Passerine night-migrants in September were recorded up to 21,000 feet.

(3) Waders, mainly Lapwings (*Vanellus vanellus*), travel at a more constant height than Passerines, nearly all the echoes on any one movement being within 2,000 feet of each other, with a few somewhat higher. Most movements occurred between 3,000 and 6,000 feet, and the highest echo was at 11,000 feet.

(4) The problem of how birds determine their altitude is raised.

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Notes on anting by British Passerine birds in the wild

Introduced by K. E. L. Simmons

THIS IS A BRIEF introduction to, and comment on, the notes by others which follow. These have been assembled from various sources. Four came to hand through editorial channels (those of Miss B. M. Atkey, Mrs. M. L. Colthurst, A. K. Kent and F. E. Muddeman). The remainder originated from my own correspondence and personal communications, primarily as a result of an article in *The Countryman* (55: 614-621) and of addresses to the B.O.U. Centenary Conference and the London Natural History Society. Some of the notes (those of Mrs. A. L. Burrington, Miss S. M. Butlin, Mrs. L. Hamer, Miss M. E. Lyddon, H. G. Hurrell and Charles G. Young) were not in the first instance intended for direct publication, but have now been cast in their present form because I thought it best that these most interesting observations should appear over their originators' names, rather than be referred to at second-hand by me.

Some recent studies

Since the publication in 1957 of my review on anting (Simmons 1957), there has been much progress in the study of this intriguing behaviour. Especially notable are the papers by Sauer (1957), Whitaker (1957) and Chisholm (1959). Sauer describes the anting of hand-reared Garden Warblers (*Sylvia borin*) with Wood Ants (*Formica rufa*). Chisholm gives a history of anting with special reference to Australian observations. Mrs. Whitaker, as well as describing in detail the anting performances of her tame Orchard Oriole (*Icterus spurius*), reviews the anting literature, provides an invaluable bibliography and lists both the birds recorded as anting and the ant species used by them. Of particular value is her clarification of some of the myrmecological aspects of anting. She shows that birds seem to be selective in their choice of ants and use, almost exclusively, species of two sub-families which either eject formic-acid (the Formicinae) or exude repugnatory anal-fluids (the Dolichoderinae). Her own bird anted with this latter group and would not use ants of the sub-family Myrmicinae, the members of which have a functional sting. Formicine ants were not available.

During 1958 and 1959 my own studies have been intensified. I have tried primarily to find out more about the anting of British birds in the wild and about the British ant species acceptable to them. In

all, ten species of ants were located (chiefly in the Reading area of Berkshire) and used in over a hundred experiments. Eight species were acid-ejecting Formicinae (*Lasius niger, L. brunneus, L. flavus, L. umbratus, L. fuliginosus, Formica fusca, F. sanguinea, F. rufa*); the ninth was the only British representative of the anal-fluid producing Dolichoderinae (*Tapinoma erraticum*); and the last was one of the stinging Myrmicinae (*Myrmica rubra*). Wild birds of several Passerine species, including some species known to ant, were seen eating ants or feeding in ant-frequented habitats without doing any anting. Anting was recorded, however, from three Blackbirds (*Turdus merula*) and a Robin (*Erithacus rubecula*); all used swarming worker-ants of the species *Lasius niger*.

Then a series of most exciting observations, some in company with Robert Gillmor, were made on the reactions of wild birds to Wood Ants (*Formica rufa*) deposited in gardens where the species was not indigenous. Several Starlings (*Sturnus vulgaris*), some Blackbirds, a juvenile Song Thrush (*Turdus philomelos*), Robin and Blue Tit (*Parus caeruleus*), and a Jay (*Garrulus glandarius*) anted under these semi-natural circumstances. Another set of tests involved the presentation of British ants to captive British and foreign birds. Here, anting was recorded from a Song Thrush with the ants *Lasius niger, L. flavus, L. umbratus* and *Formica rufa*; from a Mistle Thrush (*Turdus viscivorus*) with *F. rufa*; from two Magpies (*Pica pica*) with *L. flavus* and *L. fuliginosus*; and from a Rook (*Corvus frugilegus*) with *F. rufa*. In addition, a further forty-two birds of 29 foreign Passerine species anted, chiefly at the London Zoo. These comprised two species of crow (Corvidae), a drongo (Dicruridae), a bowerbird (Paradisaeidae), six starlings (Sturnidae), six babblers (Timaliidae), a white-eye (Zosteropidae), two cardinals (Emberizidae), seven weaver finches (Ploceidae) and three estrildine finches (Estrildidae). Between them they used eight species of British ants, seven Formicine and the one Dolichoderine. None of the three species given the stinging *Myrmica rubra* would ant with it. A full account of all this work is in preparation, together with acknowledgements and a further review.

The notes on anting by British birds in the wild

The anting literature is notably deficient in detailed information on the anting of wild birds. Of necessity, of course, many of the more important studies on anting behaviour have been made on birds in captivity. Rarely can uncontrolled watching in the field equal observation at close hand in the aviary for accuracy of detail, including the actual movements involved and their causation. Invaluable as the study of captive birds is, however, it tells us little directly about the crucial question of the occurrence of anting in nature—how widespread

it is, how frequent, under what circumstances it happens, with what ants, etc. The various notes which follow in this feature (see pp. 15-25) add considerably to our rather meagre knowledge on some of these points.

F. E. Muddeman's (p. 17) is the first ever record of anting by the Blue Tit (indeed for any member of the Paridae), though, as mentioned above, Robert Gillmor and I have since seen a juvenile Blue Tit ant. Miss B. M. Atkey's record (p. 18) is the first British one for the Mistle Thrush and there seem to be only three others for this species: Amba (1951) saw wild Mistle Thrushes anting regularly at a nest-mound of the Wood Ant in Holland; Moltoni (1948) observed passive-anting by a tame bird; and my own tame Mistle Thrush applied Wood Ants intensely the first time it encountered them. Another bird for which there are anting records only within the last year or so is the Robin, and Mrs. A. L. Burrington's observations (p. 15) include another instance for this species. Beside my own, the only other record is that of C. Gubbins, mentioned without detail by Burton (1959).

To turn to types of anting, the notes by Miss S. M. Butlin (p. 20) and W. S. Nevin (p. 18) are the first on passive-anting by the Blackbird in this country, though there is a previous Continental record (Callegari 1955). Then, A. K. Kent's report (p. 18) provides only the second instance of what seems to have been passive-anting by a Song Thrush in the wild. A much older record by Bates (1937) is not well-known in this country, but must be one of the very first describing the anting of a native British bird. Bates tells how, at Folkestone in Kent, he was attracted by the peculiar antics of a Song Thrush which he was able to approach closely (6-8 feet) and watch for six or seven minutes. In spite of his presence, the bird continued to "bathe in red ants which were issuing from a crack in the flags close to the railings. Not only did it pick up one, two or sometimes three ants in quick succession and stuff them in between the tail feathers, into the tail-coverts, primaries and under the wings, but, with the tail and wings outspread, it often wallowed among the ants which could be seen swarming all over it." It is interesting to note, incidentally, that Bates's thrush, as well as the birds watched by A. K. Kent and Mrs. Burrington, was so engrossed in its anting that very close approach to it was possible. While the activities of Mrs. Burrington's thrush clearly come under the category "anting", it does not seem possible at the moment to decide just what the House Sparrow (*Passer domesticus*)* and Dunnock (*Prunella modularis*) were really doing when she saw them dragging their tails along the ground, apparently where ants were running about (see p. 17).

* I hope to deal with the anting records of the House Sparrow in more detail in a separate contribution.

The identity of the ants used by anting wild birds has nearly always presented a serious problem to ornithologists. Most people are not qualified to name them and find little help in the myrmecological literature. As a result, not surprisingly, the ants have usually gone unnamed. Of particular value, then, are the ant-identifications in the present feature. H. G. Hurrell (p. 20) records the use of *Lasius niger* by Blackbirds and Starlings; W. A. Smallcombe (p. 22), of *L. niger* and *L. flavus* by Starlings; Robert Gillmor (p. 23), of *L. niger* by a Starling. In the last case, I was able to identify the ants from the actual specimens used and then dropped by the bird. Miss Butlin sent me live examples from the ant-heaps in her garden, where a Blackbird and several Starlings anted, and these proved to be *L. flavus*. Mrs. Burrington also submitted live ants from her garden, of the same kind with which Starlings, Chaffinches, Song Thrushes, Blackbirds and a Robin anted; these were *L. niger* once more. The last species was also probably the ant involved in the anting instances reported by Miss M. E. Lyddon (Blackbirds, Starlings, Chaffinches—p. 19), Miss Atkey (Mistle Thrush) and A. K. Kent (Song Thrush). It begins to look as if *Lasius niger* is the ant most often used by anting wild birds in this country. *L. flavus*, on the other hand, has not previously been known to be used by wild birds anywhere, though I have seen captive Passerines ant with it. Strangely enough, also, there are no field records at all yet of any wild bird in this country anting with the Wood Ant in the latter's natural habitat; this ant has often figured in experiments with captive birds and both Derek Goodwin (1955) and I (see above) have seen wild birds anting with it when we deposited numbers in gardens where it does not normally occur.

The observations by Mrs. Burrington (p. 15) and Miss Lyddon (p. 19) especially, as well as Robert Gillmor's and my own, strongly suggest that birds are particularly likely to ant at the time of the ants' reproductive swarming—that is, when large numbers of workers accompany the emergence, from underground, of the winged sexes (the males and virgin queens) before their "marriage flight". Incidentally, Gillmor's record of the anting of a Starling with swarming workers of *Lasius niger* at Reading on 7th August 1959 (p. 23) came as no surprise to me, for on the same day I had noticed Starlings hawking "flying ants" over the town and had identified *L. niger* and *F. fusca* queens among the hundreds of winged ants that fell in the streets of the shopping centre. Miss Lyddon's observations on the first anting of the young Starlings with swarming ants are particularly interesting and informative. These birds were probably not very much more than one month old and must be among the very youngest ever recorded as anting, certainly among wild birds. We know that *experienced* birds will ant when the ants are not swarming and even

when they are in very small numbers (captive birds will ant with single ants given to them), but it begins to seem that many young birds of anting species, when in the innocent and exploratory stage of their development, as well as previously inexperienced adults, are especially likely to ant on encountering a swarm during the summer months. Subsequently, they may tend to ant again chiefly under circumstances similar to those of their first anting. Many records indicate that a good deal of anting occurs on the chance encounter of birds with ants, rather than by any premeditation on the bird's part. H. G. Hurrell's Blackbird, however, was clearly an individual with a regular anting habit and a regular anting spot. Just how common such persistent anting by the individual is, remains to be discovered.

Other points in these notes worth special mention include: (1) the exceptionally early anting of Starlings (Mrs. Colthurst, p. 24; W. A. Smallcombe) due to unseasonably warm weather making the ants prematurely active; (2) the squabbling of anting Starlings (Miss Butlin; G. Beven, p. 24); (3) the gaping of anting birds (Miss Butlin); (4) bathing following anting (Mrs. Burrington; Robert Gillmor); and (5) the non-anting of woodpeckers (Mrs. Burrington).

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Anting by some garden birds.—In our garden at Exeter, Devon, we have a crazy-stone pathway crossing a lawn and, for several years now, birds have been seen anting there. This is an annual event that we look out for in the later part of the summer (no actual dates noted before 1959), when ants swarm in thousands from under the path on warm still days, usually in the afternoon. Out of the forty-odd species of birds recorded in our garden, Starlings (*Sturnus vulgaris*), Chaffinches

(*Fringilla coelebs*), Song Thrushes (*Turdus philomelos*), Blackbirds (*T. merula*) and, once, a Robin (*Erithacus rubecula*) have been identified actually anting. The birds peck at the ants as these swarm out from between the stones and grass, tucking them into their wings and adopting the most grotesque attitudes as they do so. About three years ago we once had several large swarms at different points along the pathway and watched birds lining up and anting vigorously at each. There was also a small swarm near the house, where a Song Thrush came and anted only a few feet from where we were sitting at tea in our loggia. Having anted, some birds, especially Starlings, will fly to a bird-bath near-by and have a good splash—but this does not always happen. The Robin mentioned, unlike the other birds, seemed very half-hearted about its anting. The ants concerned are small and dark brown or blackish, hundreds of winged forms usually being present as well as workers. Green and Great Spotted Woodpeckers (*Picus viridis* and *Dendrocopos major*) eat the ants but have never been seen anting.

This year, 1959, I have kept a special watch for anting. To date (6th September) no large-scale swarming has been seen in the garden as it has in other years and, for the first time, the birds have anted when the ants were not actually swarming, apparently looking deliberately for the foraging workers. It was on 28th June that I saw the first bird, a Starling, perform; it did so three times though there were only a few stray ants on the path. On 2nd July a pair of Starlings came to the same spot with two young ones. The parent birds anted for some minutes and seemed almost to be instructing the young ones which looked on but did not ant. Immediately after anting, the adults flew to the bird-bath and bathed vigorously. A male Blackbird and his mate also came to the same place next day and anted very thoroughly. This pair has brought up several families in a cypress tree in the garden. The male is very old and at this time looked very dilapidated with no feathers on his head and with drooping wings. The female was in much better condition. I watched them for the 15 minutes that they anted. The male went over every feather, first of the wings and then of the tail. To get at the latter he contorted himself into ludicrous shapes and finally found himself standing on his tail so that, like a woman standing on the train of her dress, he could not straighten up, almost falling over backwards. Both birds bathed afterwards. My husband has since seen a very similar performance at the same spot, this Blackbird also bathing immediately after.

More briefly, the other anting records for 1959 are as follows. On 8th July a Blackbird and two Starlings anted in the afternoon (a very warm day) and a Blackbird and three Starlings in the evening. On 10th July three Starlings anted intensely, apparently searching for

these insects over a patch of the lawn and even scratching the surface to disturb them; a Blackbird also anted. On 21st July several Starlings, Blackbirds and a Song Thrush were seen anting at the same time. On the last date, when my daughter and I were watching together, a House Sparrow (*Passer domesticus*) and a Dunnock (*Prunella modularis*) were also present while the other birds were anting. Both these were observed to squat down and spread their wings and tails, dragging the latter along the ground where the ants usually are. Both also preened immediately afterwards, while still on the ground, but neither picked up ants and placed them under its wings as the other birds were doing. All this took place very quickly and it was hard to be sure what exactly happened. I am therefore uncertain whether or not these birds were actually engaged in a form of anting.

A. L. BURRINGTON

Anting by Blue Tits.—On 17th September 1957 I watched the anting of two Blue Tits (*Parus caeruleus*) in the grounds of Kelling Hospital, near Holt, Norfolk. At 8 a.m., from my bed on the ground floor, I was looking at the usual garden birds on the lawn and flower-beds adjoining, when a single Blue Tit alighted on a concrete path where I had previously noticed ants going in and out of a crack. The bird began anting and from behind cover, at the close quarters of between four and six feet, I was able to see what happened.

The bird would pick up an ant in its bill very quickly, at the same time depressing its tail and extending one wing to the fullest degree. Then, with a flick of the head it would vigorously insert the ant into the feathers of its underwing and upper flank. Every ant picked up was placed under each wing alternately—first the left, then the right, and so on. The bird's actions were performed at great speed, giving the impression of a dancing display. After about 2-3 minutes of this continual behaviour, the first Blue Tit was joined by a second which immediately began anting in exactly the same way. Both birds several times dropped ants (always dead ones) from their plumage. These were immediately picked up and eaten, not placed among the feathers again. A further one and a half minutes elapsed and by this time the path was clear of ants. Both birds then flew away into a cherry tree where they were lost to sight.

During 1950 my son Norman and I also saw anting behaviour by Blue Tits at close quarters on the wide grass verge of the herbaceous border in Kensington Gardens, Lowestoft, Suffolk. The performance of these birds was identical to that of the Norfolk birds mentioned above. The Blue Tit is not listed as an anting species by K. E. L. Simmons (*Brit. Birds*, 50: 401-424).

F. E. MUDDEMAN

Passive-anting by a Mistle Thrush.—On 19th July 1957, at about 1 p.m. (B.S.T.), whilst motoring in a country road near Hay, Brecon, a friend and I observed a Mistle Thrush (*Turdus viscivorus*) in the grit at the edge of the road. We drew up within twelve feet of the bird which was crouching with its back towards us, wings and tail spread and pressed to the ground, in the position shown in Fig. 8 of the paper by K. E. L. Simmons (*Brit. Birds*, 50: 411). It was also picking ants from the ground and putting them into its feathers. We could clearly see the ants in the bird's bill and also running over its back. We could not determine if the ants were eaten or discarded after use. The performance continued, with shufflings and changes of posture, for approximately 20 minutes. Once the bird left the ants and crossed to the grass verge on the other side of the road, but it returned almost immediately and continued as before. Eventually it flew over the hedge out of sight and did not return during the half-hour or so we remained.

We later examined the spot and found ants in numbers at the edge of the road and on the grass verge. We are not entomologists and could not determine the species—they appeared to be ordinary, small brown ants. They were definitely not Wood Ants (*Formica rufa*). The weather was hot, with bright sun alternating with heavy thunderstorms, but there was no rain while we were watching. It would appear that this is the first record of anting by a Mistle Thrush in Great Britain.

B. M. Atkey

Anting by a Song Thrush.—In *British Birds* in 1952 (45: 77) an observation of mine on anting by a Song Thrush (*Turdus philomelos*) was briefly mentioned in the "Supplementary Notes". The details of this record are as follows. I saw the bird on 26th June 1950, at Iwerne Minster, Dorset. The weather had been hot and dry for several days previously. The thrush was picking objects off the ground and placing them under its fluffed feathers and under outstretched wings and tail. It was apparently very intent on its activity, for it did not move until I was only a few feet from it. Before it flew away I could see ants moving about in the grass and examination of the spot on which it had actually been standing revealed an ants' nest with a large number of ants running about outside it. I made a sketch of the bird's position soon after I first saw it: this shows it half-squatting down with both wings partly open and the tail spread. From memory the ants were small and blackish, probably *Lasius niger*.

A. K. Kent

Passive-anting by a Blackbird.—On 14th July 1954 I watched a male Blackbird (*Turdus merula*) anting in our garden at Hythe, Kent. I had been working in the potatoes and the bird, a very tame one which

knew me well, was accompanying me. It discovered an ants' nest in a potato ridge by accident and began scratching and pecking into the heap, picking up and eating several ants in succession and then placing one or more under either wing. Again and again this was done, head and beak being buried momentarily under one wing which was then closed against the body with such force that the bird—standing as it was on a shifting foundation—frequently lost its balance and fell on the ant heap. Then, its hunger appeased, the bird stepped into the crater it had formed, sank vent and belly into the moving mass of ants and spread out its wings so that the ants crept upwards through the feathers and on to its back.

I was able to watch the whole action at a distance of about twelve feet. After at least five minutes, probably ten or more, I hurried off to the house for my camera but the bird had gone when I returned. The ants were small and red. W. S. NEVIN

Anting by Blackbirds, Starlings and Chaffinch.—For several summers I have looked out for anting in our small garden at Luton, Bedfordshire, as there are always a few nests of ants in the edge of one border. In general, I have found that the birds here do not like to eat the worker ants though House Sparrows (*Passer domesticus*) do sometimes take a few and tits (*Parus* spp.) will pick them off the shrubs and as they run up the fruit trees. One tame Robin (*Erithacus rubecula*) will come and eat most of the creatures I put in a tin while digging, but it leaves the ants untouched. However, when the ants swarm for their "marriage flight" and rush all over the path (usually in August, though I have not kept a record of dates), some birds come and do their anting. The more the ants pour out, the better they seem to perform.

In 1955 I saw Blackbirds (*Turdus merula*) anting and reported this to the Bedfordshire Natural History Society (*Bedfordshire Naturalist* for 1955: 25), but it was in 1956 that I had the best period of watching. One day two very young Starlings (*Sturnus vulgaris*), not long out of the nest, were on the lawn. The ants had only started to swarm that day—in fact, that very afternoon—and, as the Starlings worked their way towards the path, two Blackbirds had already found them and were anting. These flew away and the young Starlings, running after their parents and begging for food though they could pick up things for themselves as well, saw the ants, ran into the swarm and started anting. They obviously did not need to be taught but knew exactly what to do. They seemed to pick up ants one at a time and poke them among their feathers—apparently under the wings and tail and down the breast, though I can never make out just what anting birds really do. They were so active and clumsy that they could hardly

keep on their feet, working at a terrific rate for 2-3 minutes until exhausted, and then floundering about among the plants in the border. Suddenly they stopped, looked about them and ran off towards their parents which had already flown on to the fence. In 1957, when a new path was put down and the ants disturbed, I saw no anting. 1958 was so wet that the ants (back again at the old place) were late in swarming; but when they did emerge in good numbers I saw Blackbirds, Starlings and a male Chaffinch (*Fringilla coelebs*) anting.

This year, 1959, I have seen no anting at all to date (28th August) though I have kept a careful look-out from July onwards. On 18th July, some worker ants of the usual blackish species were running about at one spot and next morning there was a small swarming there, with a few winged ants present. In the afternoon, I put some food near the place, but the only birds that came close were two House Sparrows which picked up some of the winged ants. On 25th July I found a little nest of very small ants of a species that I had not seen before in the garden. This was under a water bowl put out for the birds. There were several rather small, lightish brown winged ones present and lots of tiny, bright orange workers. They all ran about and I stirred them up but, again, only some House Sparrows came. These picked up the winged ants and I saw one bird slightly flutter its wings among them—but there was no typical anting. After heavy rain on 26th July I saw no more ants. MARY E. LYDDON

Anting by Blackbirds and Starlings with the ant *Lasius niger*.—On 22nd July 1956 I saw a cock Blackbird (*Turdus merula*) anting on short grass by the side of a path near my house at Wrangaton, South Devon, and he applied several ants before being disturbed by my approach. I went up to the spot and was able to identify the ants concerned as workers of the species *Lasius niger*. When I returned ten minutes later, the bird was back and anting again.

In the summer of 1958 a particularly tame cock Blackbird often anted just outside our sitting room window on short grass. This bird was watched on a dozen or more occasions, mainly in August but also in July and September. He always performed at the same spot, for several minutes on end. Once or twice I checked on the species of ant and again found *Lasius niger* running about where the Blackbird had been. This same ant was also identified on the grass at Peverell, Plymouth, where Starlings (*Sturnus vulgaris*) had been seen anting on at least three occasions in 1958. H. G. HURRELL

Anting by Blackbird and Starlings at mounds of the ant *Lasius flavus*.—On at least five dates I have seen birds anting at ant-hills in the garden of my home near Stonehouse, Gloucestershire. These are

permanent heaps with grass growing over them and the ants inhabiting them are the small yellow *Lasius flavus*. Anting has also been suspected on other occasions when it has not been possible for me to watch carefully.

Blackbirds (*Turdus merula*) have been seen to visit the heaps many times to feed on the ants or pupae. On 16th June 1953 a male Blackbird was watched at a range of 16 yards for a quarter of an hour, apparently passive-anting, a form of anting not recorded for this species (*Brit. Birds*, 50: 414). First it pecked a few times at the ant-hill, then lay down and several times screwed itself round in half-circles (or nearly so) before lying still for some seconds with its tail partly spread and bill raised. As the ants began to run, it pecked rapidly round the heap but no extreme posturing took place. (Unfortunately, I made no note at the time of the position of the bird's wings; so far as I can remember they were held loosely away from its sides—certainly not widely spread.) This performance was repeated five or six times before the bird went on to another ant-hill. It energetically removed a number of long pieces of hay before settling down.

On 23rd April 1959, at a range of 30 yards, I watched a pair of Starlings (*Sturnus vulgaris*) anting from 11.40 to 11.55 a.m. The birds were already at the heap when observations started. They stood on the ant-hill, or sometimes at the foot of it, and picked up ants with rapid movements, then swept them down their primaries, as if preening, with the wing brought forward in the usual attitude of active-anting. This was repeated time and time again, sometimes with slight shufflings of the wings as though the birds were shaking after bathing. Once, after apparently picking up an ant, one Starling jabbed at the root of its partly spread tail, and several times both seemed to apply ants under their wings. On three occasions a bird gaped widely, twice for as long as approximately five seconds. This was not gasping as in a sun-bathing bird, but as though its mouth were uncomfortably hot. Its bill was in a horizontal position, then held downwards (still open) just before it collected its next batch of ants: the ball of ants could be seen in its beak. During this time the pair moved to two other ant-hills within a few yards of the first and the female returned to her nest but rejoined her mate almost immediately.

On 24th June 1959 communal anting was watched: at first only four Starlings were involved, but these were joined by others until there were eleven (including one juvenile). As the numbers grew there was more and more squabbling as the birds tried to get on the heap together. The obvious excitement and rapid preenings of the adults seemed to infect the juvenile, for it briskly pecked at the ants, but it did not posture or apply them to its plumage. Its occasional

begging for food was ignored. The adults performed the usual anting movements, collecting the ants in the bill, then posturing with one wing brought forward as though to preen and (sometimes) the tail partly spread and twisted forward to the same side. Then they would sweep the bill down the primaries. One bird was watched 8-9 times apparently applying ants to each wing alternately (except for one double application to one side); another was seen to leave the group for several seconds, gaping widely. Further anting was noted twice in the day following, in both the morning and afternoon, when a flock of 15-20 Starlings, including at least one juvenile, gathered on five or six heaps. The birds bickered frequently and the typical "ant-preening" motions were observed, but no gaping was noticed. The juvenile was not certainly seen to ant. Anting was not observed again until 19th July when six adult Starlings gathered on a small heap at 6.50 p.m. I watched them from the house with binoculars for five minutes until something disturbed them. During this time, none of the birds was noticed gaping.

On no occasion that the birds were anting at these mounds were the ants swarming. At the times of the performances by the Blackbird (June 1953) and the resident pair of Starlings (April 1959) all the heaps were in their natural state; but some ten days before the communal anting in June 1959 about six of the bigger hills had been split open and left with the turfs turned back, ready for levelling. Nevertheless, by the date of the first observation the ants were underground again and in any case the Starlings performed on both disturbed and undisturbed heaps equally: in fact, some of the most intense activity occurred at a good-sized intact one, though the first four birds began anting on an opened heap.

Since 19th July I have seen no more anting to date (25th August), though the Starlings are still about and often perch on the cables above the ant-hills. The grass has grown up rather long now but the larger heaps are quite exposed. Some of the ants have been swarming, but this did not cause any further interesting bird activity.

SYBIL M. BUTLIN

Starlings anting with the ants *Lasius niger* and *flavus*.—The first day of March 1959 was rather like a summer's day; in fact it was one day of several which formed an unusual spell of false spring weather. Looking through the window towards the lawn in the front of my house near Reading, Berkshire, I saw an adult Starling (*Sturnus vulgaris*) at the base of a cherry tree, about eight paces away. The bird was actively pecking among the grass. After each peck it extended a wing outwards and forwards—sometimes the left and sometimes the right—and proceeded to stroke or preen the underside of a primary with

the tip of its beak. The stroke started, I should say, about 1½ inches from the end of the feather and moved quickly along to the tip. This action was repeated many times, in the sequence of peck and then preen. Very occasionally the bird preened under its tail. After it had flown away—having been there for a matter of five minutes—I carefully examined the area where it had been active. Crawling on and among the blades of grass were a few workers of *Lasius niger*, rather lethargic but certainly foraging, no doubt owing to the warm weather. My wife saw all the foregoing with me.

In the late autumn of 1958, I observed on the same lawn four immature Starlings actively quartering the ground and also performing anting movements similar to those described above. Examining the ants there and then, I found that they were workers of *Lasius flavus*. This is usually an underground species, but I was aware that there were several incipient colonies upon my lawn, having frequently disturbed the earth mounds they were attempting to build. On this occasion the rather vigorous pecking of the ground by these particular birds had probably induced the ants to appear, as this species does not normally forage in the open. The ants were *not* swarming at the time.

W. A. SMALLCOMBE

Starling anting with the ant *Lasius niger*.—On 7th August 1959, in my garden at Reading, Berkshire, an adult Starling (*Sturnus vulgaris*) was anting with workers of *Lasius niger*. It was a warm and sunny afternoon, about 2.15 p.m., and for a short period the ants swarmed out along the border of a lawn and a concrete terrace. Although there was not a very large number, they were restricted to a small area and in greater concentration than usual. I have on a number of occasions, with K. E. L. Simmons, watched Starlings anting in this garden in artificially introduced heaps of Wood Ants (*Formica rufa*); in fact, we had seen this only two days earlier at the same spot. The difference in the intensity of anting was immediately noticed. With the Wood Ants the Starlings had anted fast and continuously, but this single bird was almost casual in the way it picked up one or two of the insects and anted whilst it was searching for food along the edge of the lawn. It had already started anting when I first noticed it and, judging by the dead or maimed ants on the concrete (including one "ball" of about three), it had probably been doing so for some time. It anted once on the lawn, picking ants off the concrete, on to which it then hopped and anted again. It returned to the lawn and then flew to the bird-bath for a thorough bathe before finally flying off. I believe that the bird chanced on the ants quite accidentally and did not come down to them deliberately. However, about ten minutes later a Starling (almost certainly the same bird) came to the spot from

the lawn, looked around and then left without anting. By this time there were no ants on the concrete, but still some on the lawn.

ROBERT GILLMOR

Anting by Starlings in February.—On 16th February 1958, when the sun was bright and the temperature well up in the fifties, a party of eight Starlings (*Sturnus vulgaris*) discovered that ants were moving on our lawn at Bridgwater, Somerset. My eye was caught by the curious gait of the birds. Instead of running eagerly with heads forward and tails nearly level, they were strutting along with very short steps, their bodies held in a stiff upright position and the tips of their tail-feathers dragging on the grass. Any ant picked up was immediately tucked under a wing—left, right, left, alternately (I took particular notice of this)—and the wings were then held hard to the body giving the birds a slim and tidy look, most unusual for a Starling. The ants seemed to be put among the body-feathers close up under the wings which were raised slightly to receive them. Once or twice I had the impression that a bird had rubbed the insect along the inner side of the leading edge of one wing, but the movement was so quick it was difficult to be sure. At the end of ten minutes or so, five birds had resumed feeding and three were still anting. Then the bang of a neighbour's door sent them all up into a hawthorn thicket and, although I kept frequent watch during the remainder of that day and the next, I did not see any repetition of this curious and rather comical behaviour.

M. L. COLTHURST

Anting by Starlings.—On 4th July 1957 I saw a Starling (*Sturnus vulgaris*) anting on the lawn of a garden at Teddington, Middlesex. I was not close enough to see the ants, but the bird appeared to pick them up and put them under its wings and under its spread tail. There was a second Starling present and both showed great excitement. The anting bird would repeatedly drive off the other, but I think that this one, too, managed to do some anting, although not at the same time. There were a few small, reddish ants on the spot (species unknown).

G. BEVEN

Anting by Starlings.—On 22nd June 1954, in Southport, Lancashire, where the soil is sandy and much frequented by ants, I saw four Starlings (*Sturnus vulgaris*) feeding on the lawn in the ordinary, busy, preoccupied way characteristic of these birds. Suddenly they came across a colony of ants in the grass. Their manner at once became extremely excited and, in great haste, they began to pick up the ants, apparently placing them under their wings. They assumed strange attitudes with one wing extended in a crippled sort of way. The whole

PLATE 1. Adult Lammergeier (*Gypaëtus barbatus*) at the edge of its stick-and-wool nest in a small mountain cave, Spain, June 1959 (pages 25-29) (*Eric Hosking*)

PLATE 3 (*above*). The cave at the top centre holds the nest of the Lammergeier (*Gypaëtus barbatus*); nearly 30 feet below, from a ledge some 160 feet up the cliff, climbers start the final assault (*Eric Hosking*)

PLATE 2 (*left*). The top two pictures show the position of the cave-nest in plates 1, 3 and 4, with the photographer's hide 150 feet away to the left (*Eric Hosking*). The bottom photograph indicates the site of the ledge-nest in plate 5 (*Antonio Cano*)

PLATE 4. Lammergeier (*Gypaëtus barbatus*) at nest, Spain, June 1959. The ten-weeks-old youngster below watches a piece of wool brought by the adult. The old bird is dark brown on the back, wings and tail, with a creamy-buff head and neck and a vivid orange breast (page 29); the striking yellow eye stands out (*Eric Hosking*)

PLATE 5. Adult Lammergeier (*Gypaëtus barbatus*) with young over three months old, Spain, June 1958. The latter left the nest next day. The long black bristles hanging down on either side of the bill give the bird its other name of Bearded Vulture. The pattern of black on the head is well shown below (*Antonio Cano*)

PLATE 6A. The young Lammergeier (*Gypaëtus barbatus*) has been brought down, with the aid of ropes and wire-ladders, to the ledge below the cave-nest (plate 3). Here the remaining close-up photographs were obtained (*Eric Hosking*)

PLATE 6B. The size of the young bird's gape is dramatically shown here. The most colourful part of the dark brown nestling was the circle of bright orange round the chestnut iris (page 28); the bare skin of the face was bluish-grey tinged with violet (*Antonio Cano*)

PLATE 7. The eight-weeks-old young Lammergeier (*Gypaëtus barbatus*), being held by Antonio Cano. This gives a good impression of its size—already 2½ feet long with a wing-span of over 6 feet and a weight estimated at 15 pounds. The remnants of a thick down remain on the neck, wings and under-parts (*Eric Hosking*)

PLATE 8. Close-ups of the beak and foot of the young Lammergeier (*Gypaëtus barbatus*), and (*below*) fully grown and ready to leave the nest, the diamond-shaped tail already developed. Note the hard gouge-shaped tongue which is thought to be used in extracting marrow from bones. The 3-inch hooked bill is greenish, the legs yellowish-white and the nails black (page 28) (*Antonio Cano*)

incident lasted only a very short time and I consider myself lucky to have witnessed it. I had heard of certain American birds being addicts to this strange habit, but had never myself seen anything of the kind before. LILIAN HAMER

Mass anting of Starlings with swarming ants.—Adjoining my garden at Stanningfield, near Bury St. Edmunds, Suffolk, is an old, neglected churchyard which is thick with ant heaps. These mounds, substantial and permanent, are grown over with grass and inhabited by small, brownish ants. These seem normally to remain largely out of sight but on 6th August 1959 they were active on the surface and engaged in aerial flighting. Numbers of birds, including Starlings (*Sturnus vulgaris*), were catching the flying ants on the wing.

In the hot afternoon of that day, my attention was drawn by their noise to several of the local family parties of Starlings, some twenty to twenty-five birds, which were all actively engaged in anting. The flock was spread out on the heaps in a restricted area and the individuals, mainly birds of the year, were picking up beakfuls of ants and apparently rubbing them on the undersides of their half-opened wings. However, it was the continuous, excited, conversational chatter which struck me as the most remarkable feature of the gathering and this, with occasional noisy squabbling, continued throughout the hour or so that the birds were there. It was the same excitement that a flock of hungry Starlings exhibits in winter when some attractive food has been thrown to them. This makes me wonder if what one might call the social side of the anting habit has been referred to by other observers. I have not seen anting at this site before or since, though the ant heaps attract Green Woodpeckers (*Picus viridis*) quite a lot.
CHARLES G. YOUNG

Studies of less familiar birds

102. Lammergeier

By I. J. Ferguson-Lees

Photographs by Antonio Cano and Eric Hosking

(Plates 1-8)

IN SOUTHERN EUROPE there are four vultures—or perhaps one might call it three-and-a-half because the remarkable and spectacular Bearded Vulture or Lammergeier (*Gypaëtus barbatus*) is generally regarded as a link with the eagles. The very name "vulture" conjures up a vision of scrawny-necked, bald-faced monsters crowding round a rotting carcase, but the Lammergeier, though still a carrion-eater,

is a more solitary bird and far from hideous to look at. Col. R. Meinertzhagen (1959, *Pirates and Predators*) has written:

> "The lammergeier combines extreme grace in flight, an almost regal appearance in his natural surroundings with a cowardice out of all proportion to his size . . . ready to take advantage of any animal in distress, incapable of defending himself against creatures half his own size and frightened at the wink of an eyelid. And yet this bird of despicable character is one of the finest exponents of flight and aerial grace in the kingdom of birds. His poise, his long pointed wings, his torpedo body and his long wedge-shaped tail contribute to give him a greater majesty than any of the true eagles . . . sinister, magnificent and dignified. Seen at close quarters I know no bird so impressive."

Impressive it certainly is and, even if it is not the bold and resolute devil that it has often been made out to be—it used to be credited with carrying off lambs and children, and even throwing climbers to their deaths—its cautiousness cannot detract from it. Indeed, throughout its range in southern Europe and the Atlas Mountains of north-west Africa, in eastern Africa and from Asia Minor through to the Himalayas and China, it will always provide a Mecca for ornithologists. This, if we need one, must be our excuse for beginning 1960 with a species never recorded in Britain.

Inevitably with such a bird, a vast literature has grown up through the years, a lot of it superficial, much of it fanciful and some of it clearly erroneous. Misinterpretations have been copied and exaggerated by author after author. As a result, probably few other species have such a conflicting background of muddled legend and fact, and it is difficult to separate the grain from the chaff. This account is therefore largely confined to our own observations in 1959, with some comparison with those of the late E. H. N. Lowther (*J. Bombay N.H.S.*, 46: 501-508) who was one of the few others to have photographed the Lammergeier at the nest.

In Europe, the Lammergeier is confined to Corsica, Sardinia, Sicily, the Balkans and three regions of Spain. In 1958 Antonio Cano and J. A. Valverde (*Ardeola*, 5: 121-126) found a nest in the sierras of south-eastern Spain and in 1959 invited ten of us to join them in the same mountain area. The 1958 nest was not occupied in 1959, but other pairs were located and on 18th May a Lammergeier was seen to fly into a small cave high on the side of a deep valley several miles long and over a mile wide (plate 2a). This nest proved to contain a single half-feathered youngster. In Europe the Lammergeier seems to lay one or two eggs. In India, according to Lowther, there is often only one, two is the usual and three is very rare, but no more than one young is normally reared. In Europe the nesting-season begins in December or January, but the young may not leave until June or July: some eight weeks of incubation are followed by three months or more in the nest.

In the Himalayas, Lammergeiers breed as low as 1,200 feet and at least as high as 14,000 feet (while a single bird has been seen at 24-25,000 feet on Mount Everest). Our site was at about 5,600 feet, and roughly fifteen hundred feet above the floor of the valley. Most of the drop below was a steep grass-covered rocky slope dotted with pines and various shrubs like *Berberis hispanica,* but the 190 feet under the nest was sheer limestone cliff. The site was more accessible than most: it was easy enough to reach a narrow grassy ledge 30 feet below the cave (plate 3) and from this, with the aid of pitons, ropes and ladders, the nest itself was entered by Cano, Valverde and George Shannon on 19th May. As plates 1 and 4 show, the structure was tucked well into the cave and this is not uncommon; even if there is no cave it is usually sheltered under an overhang (plate 5).

The cave was nearly 5 feet deep, but only about 3 feet 8 inches high above the nest. The entrance was under 6 feet wide—so that the adult Lammergeier, with its huge wing-span of 8½ to 9 feet, had to swoop in on half-closed wings. The nest itself was composed entirely of branches of pine (*Pinus nigra*), oak (*Quercus* spp.) and juniper (*Juniperus communis* and *oxycedrus*) between 16 and 32 inches long, with a thick lining, about a yard across, of pure sheep's wool. There were only a few sticks against the wall of the cave, but the branches were piled more than a yard high on the outside edge, doubtless as levelling. Lowther described the nest in the Himalayas as "a huge pile of sticks, branches, grass, wool, skins, bones or rags" and he also found a large piece of sacking and bits of green bottles, but the only other things in our nest were a few feathers from the adult, a scattering of food and an old rope sandal. The food included two hind legs of sheep with skin and flesh, one fresh and the other less so; 8 old hooves and a freshly regurgitated one of sheep or ibex, as well as an upper mandible and a scapula; the hoof of a donkey; the skull of a dog; and one or two unidentified bones. Eight feet below this nest was an old one in a similar but smaller recess about 3 feet wide and high and 4 feet deep. This was also built up with sticks on the outside edge, but very little wool remained. Two sticks in this were over 3 feet long and 1-1¼ inches thick.

The youngster was lowered in a sack to the ledge below and there examined and photographed (plates 6-8). About two months old, it was able to stand and walk, and probably to eat by itself. The feathers were various shades of dark brown, more reddish below, and extended down the tarsus (plate 7). It would be out of place here to give the full measurements and description, but some account of the soft parts may be of interest. The inside of the mouth was bluish-pink with the distal part yellowish and rough; the gape and the bare skin of the face were bluish-grey tinged with some violet. This

bluishness extended to the base of the bill which was otherwise yellowish-green with the tip blackish (plate 8a). The iris was pale chestnut and the "white" of the eye a vivid orange (plate 6b). Yellowish-white legs were tinged with green and the nails were black (plate 8b). The huge gape is well illustrated in plate 6b: over 3½ inches (92 mm.) from tip to base and nearly 2¾ inches (67 mm.) wide. The whole head from nape to tip of bill was almost 6 inches (148 mm.).

Note particularly the hard gouge-shaped tongue on plate 8a, which is probably an adaptation for extracting marrow from bones. There are a number of reasonably well-authenticated cases of Lammergeiers killing wounded animals, but it is primarily a carrion and offal feeder, in the Himalayas even being seen on the rubbish-dumps of the hill-stations. Lowther wrote:

> "It does not . . . fight with other vultures for the tit-bits of a carcase; instead, should it visit one while the filthy meal is in progress, the lämmergeier stands by, looking on till the other vultures have left—and they do not depart until the carcase is cleaned—when it sets about the blood-covered bones of the dead animal, an incident witnessed by a number of observers including myself."

Its Spanish name is *quebrantahuésos* or "bone-breaker", arising from its celebrated habit of carrying large bones high into the air and dropping them to smash on flat bare rock below, so that the marrow (or brains from a skull) can be extracted. This act has seldom been seen by any but the people of the mountains, but Willoughby Verner saw it, and described and illustrated it in his *My Life among the Wild Birds in Spain* (1909), and M. E. W. North (*Ibis*, 90: 138-141) quoted R. E. Moreau on an ossuary in Kenya:

> "Over an area of some forty yards each way the bare rock was littered with white splinters of bone. In hollows they lay in drifts. I could have collected a dozen pailfuls. . . . A few jaw-bones were present, including those of hyrax, klipspringer and reed-buck. This may mean that the skulls had been dropped, which would give access to the brain. Most of the fragments seemed to belong to limb-bones. . . . About 2½ inches was about the biggest diameter indicated."

Meinertzhagen regards the purposeful smashing of bones by this means as still unproven, suggesting that it happens sometimes by accident and that the Kenya ossuary may have been the work of porcupines. Certainly it can be no more than a side-line.

Cano got his photographs in 1958 (plates 5 and 2c) from a hide on a platform only ten feet away. In 1959, however, the photographs on plates 1 and 4 had to be obtained with a 600 mm. lens from the huge distance of 150 feet (plate 2b). This was on 2nd June, so that the nestling was a fortnight older than in plates 6 and 7. In the 11 hours Eric Hosking was in the hide, from 08.10 to 19.12, there were five visits by one of the parents—at 08.45 (40 seconds), 10.40 (20 minutes), 12.55 (17 minutes), 14.46 (6 minutes) and 17.10 (20 minutes). The last visit ended when the second adult arrived, the only time the pair was

at the nest: the first bird at once flew off with a piece of wool and the newcomer followed. The youngster at Lowther's nest was smaller, about 4-6 weeks when he paid the first of his visits spread over 3 weeks. His bird was occasionally fed twice in half an hour, but the interval was generally 1½-2½ hours with the adult staying 8-15 minutes. It is also interesting to note that at Lowther's nest the rather younger chick was fed partly on regurgitated food, as in the true vultures, whereas Hosking saw no sign of this. In fact, apart from what seemed to be a piece of wool, the 1959 adult brought food only twice, each time in its left foot, and only on the three longest visits was the chick fed. The last time, after picking off morsels for the young and eating quite a lot itself, the old bird finally held the food in front of the nestling until it grabbed it and swallowed it whole. The food appeared to be red meat, but at Cano's 1958 nest sheep and ibex bones (scapulae, femur) and dry dead rats were brought.

The adult is briefly described on plates 4 and 5, and these and plate 1 give the main features well: the black patches extending forwards and downwards in thick bristles like a beard; the dark brown to grey upper-parts with light feather-shafts; the feathered and immensely powerful-looking legs; and the fierce effect of the striking yellow eyes. Many writers have called the under-parts buff or rusty, but in old birds the breast is a deep orange becoming paler on the belly and legs. This colour is conspicuous in flight, contrasting with the dark underwings. In the air, 4 feet long and up to 9 across, it is a monster dragon; its long, narrow, angled wings and long diamond-shaped tail give an impression of dash more like an outsize falcon. Head on, the wings show as arcs with the carpals raised and tips down, the whole effect like an unstrung bow—a striking outline set off by the pale head's contrast with the dark back and a variable black gorget. It hardly moves its wings, just occasionally giving one huge and powerful flap which brings the tips down below the body and seemingly almost touching. The young birds are dark brown (plate 8c) and, according to Lowther, do not assume adult plumage until about 5 years old.

Notes

Wilson's Phalarope in Flintshire.—At 11.30 a.m. on 30th August 1959 I saw a phalarope on a small marsh pool in the upper reaches of the Dee estuary on the Flintshire side. It was at first wading deep in the water, but as it approached the edge of the pool I noticed that it had pale straw-coloured legs, a long thin black needle-like bill, a smallish head and an elongated neck. It was about the same size as a Green Sandpiper (*Tringa ochropus*) which was present near-by.

From previous experiences in Anglesey in 1958 (*Brit. Birds*, 52: 386-387) I suspected Wilson's Phalarope (*Phalaropus tricolor*), but unlike the Anglesey bird this one was in winter plumage. Confirmation of identity came when the bird flew low over the pool, showing white rump and tail (the latter finely streaked grey) and uniform wings without any white bars—basic characters of this species of phalarope at all seasons.

The whole of the plumage, with the exception of dark primaries and some wing-coverts, was strikingly very pale, the throat, breast and under-parts being pure snow-white. The head and neck were white except for a small dark patch behind the eye, grey on the crown, and a grey mottled line down the side of the neck from the eye to the scapulars. The mantle was grey with darker wing-coverts edged pale buff, giving a patterned effect.

During three periods of watching throughout the day, totalling 3½ hours, the phalarope associated closely with a Ruff (*Philomachus pugnax*). Its method of feeding was chiefly by wading deeply, dipping the bill and head down into the water at the same time bobbing up the tail. It was also often seen swimming with backward and forward movements of the head like a Moorhen (*Gallinula chloropus*), dabbing on every side to pick insects off the surface. Only on one occasion was it seen to spin when at least twelve turns were completed. It occasionally left the water to preen on a mudbank, when a rotundness of form was noted in contrast to its elegance on the water.

The bird was seen later in the day by Dr. W. Craggs, W. Mulligan, N. F. Ellison and J. C. Gittins, and by several other observers up to 4th September.

JOHN P. WILKINSON

Wilson's Phalarope in Northamptonshire.—On 8th September 1959, at Pitsford Reservoir, Northamptonshire, J.R.B. noticed a wader of small to medium size and very pale in appearance which was quite unfamiliar to him. Only a long range view was then possible and the outstanding features were the pure white under-parts and the very pale head. In flight the wing and tail-pattern was reminiscent of that of a Wood Sandpiper (*Tringa glareola*), i.e., with white rump or tail and uniform wing with no white bar. Later the same day the bird was seen by J.R.B., G.E.D., M.G. and L. S. Taylor, again at fairly long range and the impression gained was of a *Tringa* sandpiper like a miniature Greenshank (*T. nebularia*) with a fine, longish bill. It seems worth mentioning that these first general impressions led us to think that the bird might be a Marsh Sandpiper (*T. stagnatilis*). However, the possibility of a Wilson's Phalarope (*Phalaropus tricolor*) was realised later after reference to *A Field Guide to the Birds* (of North America) by R. T. Peterson. During the following four days it was confirmed

that the bird was in fact a Wilson's Phalarope by the observations of about 15 people including I. J. Ferguson-Lees, G. des Forges and C. W. G. Paulson-Ellis. It was last seen on 12th September.

During its stay the bird was usually found feeding on the muddy margin of a main inlet bay, seldom alone but almost always near Greenshanks and Lapwings (*Vanellus vanellus*) although not appearing to consort with any one species in particular. Each time observers approached the area, Teal (*Anas crecca*) and gulls were usually present and when these were disturbed all the waders including the Wilson's Phalarope would fly off with them, often out of sight. Hence it was never possible to obtain really close views of the bird although it was seen on one occasion at a range of about 30 yards by G.E.D. The following description therefore lacks the finer details of plumage:

> General appearance slender and very pale with whitish head and white underparts, rather long thin neck and small head. Based on comparisons in the field with Greenshank and Snipe (*Capella gallinago*), estimates of size varied from that of a Green Sandpiper (*T. ochropus*) to that of a small Reeve (*Philomachus pugnax*). Bill black, straight, quite fine and about 1½ times length of head. Head and neck whitish except for grey on crown and nape and an indistinct dark mark from eye backwards and downwards, more or less joining grey on back of neck, thus leaving whitish forehead and stripe above eye. Whole of under-parts pure white except for faint wash at sides of upper breast. Back and wings brownish-grey appearing uniform except for darker primaries, general colour being rather paler than in Greenshank. White of rump not extending up back as in Greenshank but starting level with trailing edge of wings (in flight). Tail white with some indistinct colouring at tip. Underwing whitish. Legs black or certainly very dark, of medium length for a wader, toes projecting slightly beyond tail in flight.

At all times the bird was on the move and when feeding walked very briskly either with its neck stretched upwards and forwards at an angle or with its head lowered, legs well flexed and rear end tilted upwards. This latter action was not unlike that of a Water Rail (*Rallus aquaticus*) hurrying for cover. The feeding action was one of picking from the surface of the mud, never apparently probing, with the head turning quickly from side to side whilst the bird frequently changed direction in its course. It was seen swimming on only two occasions but not spinning and dabbing like other phalaropes. Even so, something of the typical "jizz" of a phalarope was at times recognised when the bird was on the ground. In flight the head and body appeared short and compact in comparison with, for example, the more rakish Greenshank. In short and leisurely flights, when the bird was not unduly disturbed, the wing-beats were shallow, but when the bird was flying away at a fair height the wing-beats were much deeper and quicker. Then, except for the whitish head, it bore a resemblance to a Wood Sandpiper, particularly as in some lights the wings and

upper parts appeared rather browner. On no occasion were any calls heard. J. R. BECK, G. E. DUNMORE and M. GOODMAN

[We have also received a description of the Flintshire bird from Dr. R. J. H. Raines. These two observations make the fourth and fifth British records of this North American wader. Although the dates did not overlap, two separate individuals must have been involved because one had dull yellowish and the other blackish legs. The Northamptonshire bird was probably a female: it seemed larger than my recollection of the one in Fife in 1954 (*Brit. Birds,* 48: 15-17) and was of a similar size to the Bedfordshire one of 1958 which was certainly a female (52: 385-386).—I.J.F.-L.]

Bridled Tern in Somerset.—On 17th October 1958 a freshly dead Bridled Tern (*Sterna anaethetus*) was found on the tide line at Sand Bay near Weston-super-Mare, Somerset. The remains were sent to the British Museum (Natural History) where the identification was confirmed. Unfortunately, by the time the bird reached London its condition was too poor for it to be decided whether it was of the typical race or the Caribbean form (*S. a. recognita*). Both wings and tail were in moult, and the plumage seemed to be adult apart from buff tips to some mantle feathers. The remains were injected with formalin and are now in my possession. This is the first record for Somerset and the fourth for the British Isles. M. A. WRIGHT

[It is perhaps of interest to add that all the three previous Bridled Terns found in the British Isles have been picked up dead. Apart from the record detailed in *The Handbook*, two others were found on the coasts of Dublin and Glamorgan in November 1953 and September 1954 respectively (*Brit. Birds,* 48: 89-90).—EDS.]

Blackbird taking Common Lizard.—On 29th June 1959, at Saltdean Vale, near Brighton, Sussex, in a place where Common Lizards (*Lacerta vivipara*) abound, I saw a first-year male Blackbird (*Turdus merula*) take one, kill it and carry it off to a bush. There are earlier records in *British Birds* (37: 116, 157; 38: 237; 45: 77) of Blackbirds taking Slow-worm (*Anguis fragilis*), mouse (? species), Common Newt (*Triton vulgaris*) and Common Eel (*Anguilla anguilla*), and also attacking a small Grass Snake (*Natrix natrix*), but I can find no previous case of one preying on a lizard, though doubtless this happens often enough when the opportunity arises. GORDON N. SLYFIELD

Flycatching by a flock of Meadow Pipits.—On 27th March 1959, at Beddington sewage farm, Surrey, I watched a flock of about 50

Meadow Pipits (*Anthus pratensis*) flycatching from a wire fence for some 25 minutes. The fence ran beside a shallow dyke which divided two flooded grass meadows and the birds were continually flying out over these, hovering and chasing flies. Only rarely after one of these flights did a bird drop to the ground: usually each one returned to its position on the fence. The sun was occasionally obscured by small patches of cloud and the birds then became far less active: I noticed that the flies were more visible in sunlight and presumably this was the reason. The birds were finally disturbed when a flock of Starlings (*Sturnus vulgaris*) took possession of the wires. R. E. SCOTT

Starlings affected by smog.—With reference to the note by Mr. W. M. Peet on Starlings (*Sturnus vulgaris*) affected by smog (*Brit. Birds*, 52: 238), it is interesting to remark that a similar phenomenon occurred in Bishop's Stortford, Hertfordshire, on three separate occasions in January 1958. The main "wreck" took place on the evening of 18th January—a night when thick fog hung low over the area—and about one hundred corpses were counted next morning along a mile of the main London road (A11). During the night several people observed a large flock of Starlings wheeling in the fog above the street lamps, and some actually saw birds falling to the ground as if they had "dropped dead in flight". Most of the dead birds were found to have broken necks, although a few had survived the fall only to be killed by passing vehicles. Starlings sent to the Department of Animal Pathology, Cambridge, were reported to have died mainly from asphyxia, presumably due to the severe fog.

The second "wreck", occurring in thick fog on the evening of 24th January, resulted in 30 corpses being found. More interesting, however, was the third "wreck" two days later, on 26th January, for although only 12 corpses were found the next day, it took place on a clear night when there was no fog. It should be added that these were definitely fresh corpses picked up in an area which had been cleared of bodies after the 24th. Unfortunately, none of these later casualties were properly examined and the exact cause of death is uncertain.

There has been no recurrence of such "wrecks" in the Bishop's Stortford area since then, in spite of fog on many nights during the winter of 1958/59. ROBERT J. DOWSETT

[The Merseyside Naturalists' Association *Bird Report* for 1958-59 gives details (p. 38) of a remarkable "wreck" of Starlings and other birds on the night of 15th/16th January 1959. Dense smog over the Mersey estuary "caught many Starlings returning on afternoon flights from Cheshire to Speke roost". These birds apparently dropped

into the heavily-oiled river, the tide carrying them down and depositing them on the shores from Rock Ferry to Wallasey. An estimate of 10,000 corpses (98% Starlings) was considered reasonable, and over 2,900 corpses were examined by Messrs. Eric Hardy, R. Warhurst, G. E. Rutter, R. Clitheroe and others. These corpses included 17 species apart from the Starlings: several sea-birds, ducks and waders among these had probably died from oiling alone, but other land-birds included Rook (*Corvus frugilegus*), Carrion Crow (*C. corone*), House Sparrow (*Passer domesticus*), feral pigeon (*Columba livia*), Sky-lark (*Alauda arvensis*), Blackbird (*Turdus merula*), Song Thrush (*T. philomelos*), Linnet (*Carduelis cannabina*) and Greenfinch (*Chloris chloris*). 23 corpses sent to Dr. A. R. Jennings at the Department of Animal Pathology, Cambridge, were "all coated heavy oil and sand. Alimentary tract in each case acutely inflamed, the lungs were congested, and, in many birds, contained multiple haemorrhages. The bodies of the Starlings showed the greatest changes in the lungs; all these birds had suffered from extensive pulmonary damage and had died from asphyxia. I would suggest that the Starlings were brought down as a result of smog. I consider that the oiling of the feathers occurred subsequent to the lung changes." We are grateful to Mr. Eric Hardy for drawing our attention to this account.—EDS.]

Starlings flying at night.—Between 4.30 and 5 p.m. on 31st January 1958 I observed the usual flocks of Starlings (*Sturnus vulgaris*) passing over my house at Great Witchingham, Norfolk, on a northerly course —their normal flight line to roost. It was a foggy evening and the flocks, some of which must have numbered over a thousand birds, were visible only when overhead: they were presumably flying at such a height that they could just see the ground (about 100 feet). At 6.30 p.m. on the same day I was surprised to hear a flock of birds pass directly overhead in the darkness. Visibility by this time was down to about 20 yards, having been in the region of 40-50 yards during the day (but the previous night, when the fog was very thick, it had been down to 8 yards or less).

I remained watching and it became evident that two flocks of Starlings, each numbering several hundred birds, were circling the house. They were clearly visible when passing overhead and audible most of the time. Beyond the house are two ranges of turkey pens which are illuminated at night by a total of approximately 3,600 watts. This light can be seen at quite a distance, even in foggy weather, and was presumably attracting the birds. Each time they sighted the farm buildings, however, the flocks would "flare" upwards with a roar of wings. Both flocks were accompanied by a distinct sound which seemed to be made by individual birds, either with primaries

missing or damaged, or else flying alone and low behind the rest, perhaps tiring. I remained watching for half an hour until 7 p.m. and then went out every 30 minutes or so. At 10.30 p.m. both flocks were still circling and apparently making rough figures of eight centred over the house. An average of 20 timings showed the larger flock to be audible for 25 seconds on each circuit, and inaudible for 15 seconds. On three occasions individual birds were heard to flutter down and crash-land—exhausted. These birds occasionally called. At times the two flocks seemed to amalgamate and then divide again. At 10.45 p.m. they had apparently finally joined up and a good many birds must have landed, though several hundreds still remained. An average of 7 timings showed the birds to be passing overhead every 46 seconds at about 60-80 feet. At 11.30 p.m. the one flock was still circling and an average of 4 timings showed it to be audible for 20 seconds and inaudible for 22. Visibility appeared to be lifting and at 11.47, when I next came out, it had increased to 150 yards; by this time a slight drizzle was falling. Two individual Starlings passed over, but the main flock was not in evidence.

That these birds were benighted on the way to their roost seems obvious, but, since trees silhoutted against the light were plainly visible to a human observer at 20 yards, one is tempted to ask why they continued to circle round for over five hours when they could presumably have settled in the trees. When visibility lifted at 11.30 p.m., did the main flock alight in the neighbouring trees, or did they fly several miles to their usual roost? PHILIP WAYRE

Rock Bunting in Pembrokeshire.—On 15th August 1958, at Dale Fort, Pembrokeshire, we heard a persistent call-note which was new to us. It was coming from an area of scrub and bushes overlooking the sea—a single note repeated rhythmically, with the intervals 3-5 times as long as the duration of the sound (J.H.B.). The note was clear and not very high-pitched, a clipped "zze'ap" which was not truly bisyllabic, but rather a slide from the first part to the second. It was a note less clean in outline than the "tzink" of a Yellowhammer (*Emberiza citrinella*) and J.D.P. thought it a plaintive sound with a bubbling element.

Through binoculars in good light, at a distance of about 30 yards, we had short independent views of the bird, particularly of its head. This was a soft pale grey with well-marked black bands; the grey extended low round the back and sides of the head and down on to the throat. J.H.B. noted three dark bands on the side of the head while J.D.P., looking from above, saw three dark stripes on either side. The rest of the plumage left J.H.B. with an impression of strong rufous, but he cannot identify the rufous areas as his attention was focused on

the head. J.D.P. observed only the head. The bird was the size of a Yellowhammer and had the flight of a typical bunting. It flew away low and was later flushed again from on or near the ground in a patch of brambles, gorse and rough grass on the cliff edge. From here it flew low and silent back to the scrub area where it was first found. It was not seen again that day, but J.H.B. heard the same call at 7.15 a.m. on the 16th and J.D.P. also heard it 1¾ hours later.

This appears to be the first record of a Rock Bunting (*E. cia*) for Wales. JOHN H. BARRETT and J. DOUGLAS PICKUP

Reviews

Pirates and Predators: the Piratical and Predatory Habits of Birds. By R. Meinertzhagan, C.B.E., D.S.O. Oliver and Boyd, Edinburgh and London, 1959. 240 pages; 18 colour and 26 monochrome plates. 70s.

Combining in his person the acknowledged status of both *enfant terrible* and elder statesman of British ornithology (in that order) Colonel Meinertzhagen shamelessly trades on the fact that he, like Sir Winston Churchill in a wider sphere, can now do no wrong or, alternatively, can get away with murder. We can therefore permit ourselves to enjoy at their face value such remarks as (to quote some of the more restrained):

> "The excuse is that objectionable word 'vermin'. Every conceivable form of wild life which might possibly disturb game is classed as vermin, whereas the most dangerous disturber of wild life and the greatest vermin of all is man himself."
>
> "It is not surprising that man is mentally and bodily diseased; what is surprising is that man has survived despite the medical profession."

Passing on, then, to the more ornithological aspects of this book, several of the colour plates are pleasing examples of the work of the late G. E. Lodge, while the remainder in monochrome form an enterprising blend of photographs and drawings which are on the whole very successful in illustrating the text. This is in four parts, the second and third dealing under species headings with such "amateur" predators as crows, herons, cormorants and gulls and with the "professionals" or diurnal and nocturnal birds of prey. The first part is generally concerned with such problems as food preferences, territories, and methods of attack and defence; the fourth, entitled "Autolycism", deals with ways in which birds make use of man and of other birds and animals.

Covering so wide a range, Colonel Meinertzhagen very sensibly proceeds by jumps, making a series of points in his own inimitable

style and illustrating them, often most cogently, by his own observations or those of others. For example, in discussing territories and hunting beats he describes the summer and winter daily routine of a pair of Golden Eagles on Ben Wyvis:

> "With snow on the ground . . . they would hunt the summit of Wyvis for ptarmigan and hares in the early morning and in the afternoon would come lower down for grouse between 2 and 2.30 p.m. . . . This routine was regular and by posting myself at the proper place I could almost rely on seeing them."

This book is a rich and fascinating quarry of authentic examples of behaviour relating to its general theme and deals with a large number of species in Britain and in many other countries. The author's world-wide and seventy-year-long experience, together with his great knowledge of the literature and the problems involved, have enabled him to make many additions, large and small, to the facts available. For example, he carries much farther into the past than has hitherto been known the story of the Starling roosts of inner London. Taken all round, this is an impressive work which no one else could have written, and certainly no one can read it without feeling stimulated to pursue some of the many topics which Colonel Meinertzhagen uncovers with such perennial zest. E.M.N.

The Birds. By Oskar and Katharina Heinroth. English edition prepared by Michael Cullen. Faber, London, 1959. 175 pages; many text illustrations, some photographic. 18s.

This book provides an excellent introduction to many aspects of the life and behaviour of birds, and will be valuable to the field observer who, having learnt to identify the species, feels the need for a better understanding of them. Its author, Oskar Heinroth, was one of the great ornithologists of the early decades of this century. He hand-reared many species, and his classic *Die Vögel Mitteleuropas*, based largely on his own original observations, served as an inspiration to those who came after him. He was also for many years Curator of the Berlin Zoo, and the first German edition of the present volume was an attempt to bridge the gap between the rather naïve views held by the Zoo visitors and the scientific knowledge which was then becoming available. Although first published in 1936, it was brought up to date after the war in collaboration with his wife and certain sections have been further revised by the English translator, Dr. Michael Cullen.

Most aspects of behaviour are discussed, maintenance activities as well as reproduction. There are also chapters on growth, moulting, coloration, navigation and a variety of other topics. The treatment

in each case is that of an all-round ornithologist—behaviour is related to structure, physiology and ecology. Although more detailed and up-to-date treatises on many of the topics covered are now available, the book is written in an inspiring style and this English edition will enable many bird-spotters to increase their enjoyment by gaining a fuller understanding of the birds they see. R.A.H.

Letters

Anting and dust-bathing

Sirs,—I read with interest the paper by K. E. L. Simmons on anting behaviour (*Brit. Birds*, 50: 401-424). In that, Simmons rejected A. H. Chisholm's theory that anting derived from dust-bathing. In this connection, however, it may not be generally known that an Australian bird, the White-winged Chough (*Corcorax melanorhamphus*), has a regular habit in which the elements of both appear.

Selecting an area of very dry ground, this bird will pick up beakfuls of dust and place them in various parts of its plumage. The dust may either be loose or be pecked out of hard ground. The postures of the White-winged Chough during this performance appear identical with those of active-anting, although they lack some of the excitement of the latter.* Dust is placed among the breast feathers; the body is stretched up and more is put among the feathers of the lower abdomen and the under tail-coverts; the wings are separately spread out and down, and dust is inserted along the undersides and against the body; also in this posture the head is stretched back and the feathers of the upper wing and back are similarly treated; finally, the tail is curved sideways and forward and the head brought back to reach the tail-feathers. At the end of the performance, which may last up to ten minutes, the bird shakes itself vigorously and at the same time takes flight, leaving a puff of dust behind it. The squatting position of dust-bathing is not used. In keeping with the communal habits of this species, several birds may perform together.

This habit was first recorded by J. Douglas Gibson (*Emu*, 54: 279). Gibson collected some of the dust used and made chemical tests on it for formic acid, with negative results. Since then I too have published an account of the performance (*Emu*, 57: 290) and have, in all, witnessed it some ten times. Here in Australia one may also frequently see the shallow excavations made by these birds. Every time, I have examined the area for traces of ants, ant-nests or ant-tracks, but always

* I have personal experience of active-anting in two Australian species—the Raven (*Corvus coronoides*) and the Yellow-tailed Thornbill (*Acanthiza chrysorrhoa*).

without success. In fact, on three occasions the action took place on hard flood-deposits in which no ants existed and from which any acid or foreign substance would, presumably, have been leached.

This would appear to be an instance of something midway between active-anting and dust-bathing. Is it the connecting link between these two activities, or a modification of anting, or an individual habit developed in this one species? I have never seen or heard of actual anting being performed by the White-winged Chough.

J. N. HOBBS

[We showed this letter to Mr. K. E. L. Simmons and he commented as follows: "I do not think that the unique dusting behaviour of the White-winged Chough—which, of course, is not a crow (Corvidae) but a bell-magpie (Cracticidae)—does necessarily provide evidence for a derivational link between dust-bathing and anting, though not enough is known about the phenomena for one to express convincing opinions either way. Possibly, however, both the dusting movements of the White-winged Chough and those movements used widely by Passerines in active-anting have been independently derived from wing-oiling movements (see Simmons, *Ibis*, 101: 368-372). Certainly the dusting of those few other Passerines in which the behaviour is known to occur—sparrows (Passeridae), larks (Alaudidae) and wrens (Troglodytidae)—seems in no way to resemble active-anting, though there may be a functional relation between the two (see Derek Goodwin, *The Ornithologists' Guide*, pp. 101-104). A. H. Chisholm in his recent review (1959) of the history of anting (*Emu*, 59: 101-130) includes a record of the White-winged Chough passive-anting, on the authority of G. Painter (August 1946 issue of *Wild Life*)."

It should be added that we received Mr. Hobbs's letter before the publication of Chisholm's reference to passive-anting in this species. —EDS.]

Birds crossing the Atlantic on ships

Sirs,—The recent notes by Miss Katharine Tousey and Prof. John M. R. Margeson on "Myrtle Warblers (*Dendroica coronata*) crossing the Atlantic on board ship" (*Brit. Birds*, 52: 237-238), and also the one by Messrs. R. MacArthur and P. Klopfer on other American species (*Brit. Birds*, 51: 358), prompt the following comment on the appearance of New World birds in the Old World.

Judging by my own repeated experience, every ship that sails from the east coast ports of the United States while a migration is under way carries with it an assorted cargo of migrants, usually Passerines. Most, if not all of them, disappear in the course of the first two days.

Some, however, succeed in making themselves at home and sustaining themselves indefinitely on board. When the first landfall is made I have seen such passengers leave the ship and wing their way ashore. Bigger birds are often captured by members of the crew, and are caged and fed, to be released when land is sighted. Thus, on my last ship-crossing of the Atlantic, from New York to the Mediterranean in September 1956, we carried among other passengers a Least Bittern (*Ixobrychus exilis*) which came aboard the first night and was promptly adopted by a steward. It was released in the Straits of Gibraltar, but unfortunately the steward was an eccentric who would not give the bird a proper diet and it was consequently so weak that it ended by falling into the ocean.

Generally it is the weak flyers which are constrained to accept this kind of passage. They come aboard at night, or one sees them come aboard by day, and the shore is too far away for them to risk the attempt when they want to make their way back to it.

In these circumstances I always wonder at the general tendency to assume as a probability that any American bird that shows up in Europe made it across on its own. The fact is that many birds must be helped over the Atlantic every year, whether others make it on their own or not. If the travel is mostly one way, that may be because the prevailing winds are offshore on the American side, onshore on the European. With the co-operation of interested ship's officers, crew members or passengers, it ought to be possible and worth-while to get more data on these stowaways. LOUIS J. HALLE

[Some of the points in Mr. Halle's interesting letter have not been overlooked by those responsible for considering the claims of certain American birds to be added to the British list. In 1954 and 1955 the occurrence of a Yellowthroat (*Geothlypis trichas*) on Lundy and of a Myrtle Warbler near Exeter, Devon, forced us in conjunction with the B.O.U. Records Committee to reconsider the whole question of "assisted passage". The conclusion was published at the time (*Brit. Birds*, 48: 146-147; see also *Ibis*, 98: 156-157) that this possibility should not necessarily deny a bird admittance to the list. The regular migrations that take place between Greenland and Europe show that long sea-crossings by small Passerines are perfectly possible, and there is no means of telling whether or not and for how long *any* American bird which reaches Britain may have settled on a ship. It was felt, therefore, that each case should be judged on its merits, but that in general all American birds should be accepted as genuine records unless there was a likelihood of escape from captivity or other direct evidence that the individual had not arrived in a free state. The unrealistic alternative would be to exclude all American species from the British

list. However, we do appreciate that shipboard crossings are regularly made and we are interested in any well-authenticated cases like those quoted at the beginning of Mr. Halle's letter. It would indeed be valuable, as Mr. Halle suggests, to obtain more complete records of transatlantic bird passengers, but such a scheme would need considerable organization.—EDS.]

Requests for Information

Field Investigations of the B.T.O.

Status of the Wryneck.—Readers are reminded that all records of this species are of value (see *Brit. Birds*, 51: 163) and should be sent to editors of county bird reports or, in cases of doubt, to the organiser: Dr. J. F. Monk, The Glebe Cottage, Goring, nr. Reading.

Great Spotted Woodpecker Enquiry.—Information is required on (1) the present status of the Great Spotted Woodpecker in the British Isles; (2) whether the practice of visiting bird tables is increasing and if so whether it is due to a new "tameness" or to a shortage of other food; and (3) whether the practice of attacking nest-boxes is a new habit and if it is due to shortage of nest-sites (*Brit. Birds*, 52: 126-129, 270-271). Forms for this enquiry (which is to continue until March 1960) may be obtained from the organiser, Mrs. P. V. Upton, Park Lodge, Margaretting, Ingatestone, Essex.

Winter status of the Lesser Black-backed Gull.—This is a repeat of the enquiries held in the winters of 1949-50 and 1950-51 which showed that a small but probably increasing number of these gulls were wintering in the British Isles. There are indications of a considerable increase in some areas since then and all records, even if only of single birds, are of value. Observations should be sent to J. A. G. Barnes, Earnseat, Arnside, Westmorland, from whom forms may be obtained. This enquiry terminates on 14th February 1960.

Recent Reports and News

By Kenneth Williamson and I. J. Ferguson-Lees

The items here are largely unchecked reports, and must not be regarded as authenticated records. They are selected, on the present writers' judgment alone, from sources generally found to be reliable. Observers' names are usually omitted for reasons of space and in case a report is subsequently rejected, and none of the items will be mentioned in our annual Index. Readers are asked to submit anything of interest as quickly as possible.

This summary should be read in conjunction with that in our last issue (pp. 435-440) as it completes the outline for the months of September and October by dealing with the Passerine and other groups which were not covered there.

SWIFTS TO WOODPECKERS

Late Swifts (*Apus apus*) were seen at Warden on the Isle of Sheppey (Kent), North Finchley (Middlesex) and Craster (Northumberland) on 17th, 18th and 19th October

respectively, and it would perhaps not be too out of place to mention here two even later ones at Appleby (Westmorland) and over Brean Down (Somerset) on the astonishing dates of 20th and 22nd November. These last two are later than all but two of the dates given in *The Handbook*, and all five of these reports are later than those in 1958 although there were then rather more October records (*Brit. Birds*, 51: 531). The only Alpine Swift (*A. melba*) reported during the period was at St. Agnes (Isles of Scilly) on 6th October.

Kingfishers (*Alcedo atthis*) are not usually thought of as migrants and so it is interesting to note that occasional ones were seen at St. Agnes during September (the first was actually on 18th August) and that on 2nd October there were no fewer than three there. One was seen flying out to sea from Selsey Bill (Sussex) on 15th August, and further suggestion of migration came from Cape Clear Island (Co. Cork) and Portland Bill (Dorset): at the former observatory single ones were recorded on 2nd and 14th September, and at the latter on 20th September and 10th October. The last perched on top of the lighthouse tower.

As already mentioned (*Brit. Birds*, 52: 320), it was a very poor autumn for Hoopoes (*Upupa epops*): one near Baltimore (Co. Cork) on 28th August has not previously been mentioned, but the only September record we have received was at Great Saltee (Co. Wexford) on the 26th. A juvenile Bee-eater (*Merops apiaster*) appeared at Cape Clear Island (Co. Cork) on 17th-18th October, and Ireland also produced one of the only three Rollers (*Coracias garrulus*) reported during this period, at Tory Island (Co. Donegal) on 30th September. The other two Rollers were at Staines Reservoir (Middlesex) on 26th September and at St. Agnes in the Scillies on 22nd-23rd October.

Migrant Wrynecks (*Jynx torquilla*) were rather scarce, particularly compared with 1958 (*Brit. Birds*, 52: 358), though we received a few reports from Co. Durham, Yorkshire, Norfolk, Essex, Kent and Sussex. A Great Spotted Woodpecker (*Dendrocopos major*) appeared at Cley (Norfolk) on 25th September and a bird of the Northern race (*D. m. major*) was trapped there on 11th October.

LARKS, TITS AND TREECREEPERS

A Short-toed Lark (*Calandrella cinerea*) was identified at Cley on 14th October, but this was the only unusual species of lark reported.

There was evidence of a small scale irruption of Blue, Great and Coal Tits (*Parus caeruleus, major* and *ater*) during September and October, particularly from the middle of September to about 20th October. We have received reports of Blue and Great Tits on the move from Norfolk down to Kent and from Kent to Dorset and Somerset, and from 13th October Fair Isle had the first Great Tit recorded there for years, but the general impression is that the whole thing was on a much smaller scale than in 1957. Continental Coal Tits (*P. a. ater*) were also concerned: two at Dungeness (Kent) on 4th September were followed by eight in mid-month and 15 on the 26th; Sandwich Bay (Kent) had 6 on the 17th and 4 on the 30th, and Portland (Dorset) two from the 14th. In October there was one at Portland on the 3rd and also 4 at St. Agnes; Cape Clear Island (Co. Cork) reported one on the 6th and there was an increase at St. Agnes next day. Movement of Long-tailed Tits (*Aegithalos caudatus*) was also indicated by the unprecedented occurrences of 7 at Portland on 2nd November and 5 at Great Saltee (Co. Wexford) on the 5th, and one was seen to fly in off the sea at Hartlepool (Co. Durham) on 25th October.

The limelight was undoubtedly stolen, however, by the Bearded Tits (*Panurus biarmicus*). The numbers of these birds have been building up steadily in Norfolk and Suffolk over the last two or three years and 1959 seems to have been a wonderfully successful breeding season. Parties of Bearded Tits have been seen flying up

from and actually leaving their reed beds and it is not surprising that odd ones should have appeared at a number of places in other counties, though it is difficult to know whether such vagrants are of British stock or whether they may have come from Holland. There was one at the sewage farm at Cambridge on 9th September and one at Claydon Brook near Winslow (Buckinghamshire) on the 15th. No more vagrants were then recorded until the middle of October, when on the 17th no less than 11 (of which 6 were caught and ringed) appeared at Spurn (Yorkshire) and the next day 3 were seen at Hornsea Mere (Yorkshire). On 31st October at least 6 (of which 3 were caught and ringed) were found at Pett Level (Sussex) and 7 were still present a fortnight later. On 4th November two were identified at the Crumbles (Sussex) and then, to bring the story as up to date as possible, on 22nd November 4 appeared at Marsworth Reservoir, Tring, which is just on the Buckinghamshire side of the boundary between that county and Hertfordshire, and six days later, on the 28th, three were seen at Cassington gravel-pits (Oxfordshire). The Marsworth birds were still present on the 29th and the Cassington ones on 5th December. Finally, too late for details here, we have had reports of Bearded Tits in Kent, Lincolnshire, Gloucestershire and Warwickshire.

Northern Treecreepers (*Certhia f. familiaris*) are identified from time to time in this country, particularly on the east coast, but there are few records of specimens which have been compared with skins. It is therefore interesting to note that a Treecreeper which was caught at Spurn (Yorkshire) on 6th October, and which died as the result of an unfortunate accident, proved to be of this form when sent to the Bolton Museum. A Treecreeper at Fair Isle on 17th-18th October was also identified as of this race.

THRUSHES, ROBINS AND GOLDCRESTS

The most striking Passerine movement of the period was undoubtedly the influx of Goldcrests (*Regulus regulus*) and Robins (*Erithacus rubecula*) which took place in the first half of October and which seemed to be accompanied by unusual numbers of Wrens (*Troglodytes troglodytes*) and big movements of thrushes—Song Thrushes (*Turdus philomelos*), Blackbirds (*T. merula*), Redwings (*T. musicus*) and Fieldfares (*T. pilaris*), with odd Ring Ouzels (*T. torquatus*). We are not attempting to cover this influx in any detail here because it is best followed by the reports from the bird observatories in *Bird Migration*, No. 3. However, we might perhaps summarise briefly by saying that the first wave of Goldcrests became marked in the south-east on 30th September and reached another peak on 4th and 5th October when Robins were also numerous. On these dates, too, as well as on the 6th and to a lesser extent the 7th and 8th, these species were particularly remarked upon in Kent, Sussex and Essex, and as far north as Yorkshire and Co. Durham. The peak period, however, was from the 9th and 10th to the 12th or 13th. There was then a much greater influx of Robins and Goldcrests and the real hordes of thrushes, particularly Redwings, came in at this time. Now the movement was really striking as far west as Dorset, the Isles of Scilly and south-west Ireland, up the Irish Sea as far as Bardsey and all the way up the east coast. The various species were not always in the same proportions and sometimes one or another was absent, but some impression of numbers can perhaps be gained from such estimates as 100 Goldcrests in a garden at Portland (Dorset), 500 Goldcrests in one small area at Sandwich Bay (Kent), 600 Goldcrests at Gibraltar Point (Lincolnshire), 1,000 Robins on St. Agnes (Isles of Scilly) and so on. On the night of the 10th/11th there were remarkable hordes of birds around the lighthouse on Bardsey: "immense swirling clouds" of Redwings circled round and a tragic 400 of the many thousands killed themselves against the light; the many other birds included various warblers and flycatchers. Later in October and in early November reports of increases in Goldcrests, and also unusual

numbers of Fieldfares and Redwings, began to come in from the Midlands, north-west England and other inland areas.

Various other species appeared during the time of this movement. These included large numbers of Starlings (*Sturnus vulgaris*), a peak among the Blue and Great Tits already mentioned, large numbers of Chiffchaffs (*Phylloscopus collybita*) in the south, Redstarts (*Phoenicurus phoenicurus*) in the east, and a trickle of Stonechats (*Saxicola torquata*) and Whinchats (*S. rubetra*). There were also various rarer vagrants which will be dealt with in the sections which follow.

FIRECRESTS

There were some early Firecrests (*Regulus ignicapillus*) in Kent, with one on 30th August, 5 on 4th September and 6 next day at Dungeness, two at Sandwich Bay on 6th September, and single birds at Folkestone on the 8th, 9th and 23rd. There was a larger influx in this area on the 30th, with 10 at Dungeness and 6 at Sandwich (increasing to 10 on 1st October), and this movement was reflected along the east coast at Blakeney (Norfolk), Flamborough Head (Yorkshire) and the Isle of May (Fife). These numbers were small—there were only two at Flamborough and the same at Blakeney (the second appearing there on the 1st)—but the single bird at the Isle of May which stayed from 30th September until 3rd October is of special interest because it was the first Firecrest ever recorded in Scotland.

Firecrests were seen at roughly five-day intervals at St. Agnes (Isles of Scilly) from 10th September to 2nd October, and there was another there on the 11th, but the most striking record in this region was the 7 at Cape Clear Island (Co. Cork) on 10th October, for there are only two previous Irish records. Along the Channel coast there were sporadic appearances in Hampshire (Hengistbury Head and Southampton, 16th and 18th October respectively) and Dorset (Portland, one on 5th October and two on the 10th).

BLUETHROATS

Bluethroats (*Cyanosylvia svecica*) were widely scattered, but there were not nearly so many as in 1958 (*Brit. Birds*, 51: 435-436). The species was present at Fair Isle during 16th-25th September (two on the 18th), but appeared earlier in the south. The first ones were reported from Cley (Norfolk) and Bognor (Sussex) on the 4th and 6th, followed by one at Spurn (Yorkshire) during the 9th-11th and another there on the 17th. One was seen daily at Shoreham (Sussex) from the 12th to the 23rd (with two during the 18th-20th) and there were single birds at Stanpit Marshes near Christchurch (Hampshire) on the 12th and 19th. A first-winter male at Marston near Grantham (Lincolnshire) on the 13th, and other birds at Rye Meads (Hertfordshire) on the 19th, at Rye Harbour (Sussex) and Hoylake (Cheshire) on the 20th, and at Folkestone (Kent) on the 22nd, complete the September tally for English localities and very few remain to be added for October: single birds at Gibraltar Point (Lincolnshire) on the 2nd, at Fair Isle on the 5th, 9th and 15th, at Hartlepool (Co. Durham) on the 6th and at Pagham Harbour (Sussex) on the 14th, and one or two at St. Agnes from the 12th to the 25th. The last included an adult male of the Red-spotted form (*C. s. svecica*) on the 12th. The only Irish records came from Cape Clear on 17th-18th September and again exactly a month later.

RARER WARBLERS

The earliest of the rarer warblers to appear was the Aquatic (*Acrocephalus paludicola*). Some nine August occurrences have already been detailed (*Brit. Birds*, 52: 318-319) and to these should be added a tenth—one at Pagham Harbour (Sussex) on the 29th. During September there were at least 12 more reports, including a second observation at Ham Island near Old Windsor (Berkshire) on the 13th (perhaps the same bird

as in August). Eight of these were in the first nine days of the month—at Portland and at Marazion Marsh (Cornwall) on the 2nd, at Wartling near Hailsham (Sussex) on the 5th, at St. Agnes and at Stanpit Marshes near Christchurch (Hampshire) on the 6th, again at the same two localities on the 8th, and at the Crumbles (Sussex) on the 9th. There was another at St. Agnes on the 16th and at Stanpit from the 19th to the 23rd, and finally one at Beddington (Surrey) on the 20th—making an autumn total of more than a score from Kent westwards along the Channel counties to Cornwall and the Isles of Scilly.

As mentioned earlier (*Brit. Birds*, 52: 319), there were fewer Melodious Warblers (*Hippolais polyglotta*) than in 1958, and the only additions in September were one at Bardsey Island (Caernarvonshire) on the 1st, two at Cape Clear Island on the 3rd and one at St. Agnes on the 7th, confirming the peculiarly southern and south-western distribution we have commented on previously (*Brit. Birds*, 51: 436-437). The other member of this species-pair, the Icterine (*H. icterina*), strayed farther west than usual, with appearances at Cape Clear Island in September on the 2nd and 21st (two) and at Great Saltee on the 4th and 7th, all first-winter birds. None appeared at Fair Isle after August, but the east coast had Icterines at Helmsdale (Sutherland) on the 3rd and at Spurn (Yorkshire) on the 2nd (three) and 3rd-4th. The last report of an Icterine Warbler came from Dungeness on 25th September. An Olivaceous Warbler (*H. pallida*) trapped at Tory Island (Co. Donegal) on 29th September provided the first record of this species for Ireland.

Another extremely rare species was a Brown-backed or Rufous Warbler (*Agrobates galactotes*) which was well seen at Prawle Point (Devon) on 20th October. The last previous appearance of this species was at Great Saltee (Co. Wexford) on 22nd September 1951. The Bonelli's Warbler (*Phylloscopus bonelli*) trapped at Bardsey on 19th August (*Brit. Birds*, 52: 319) was twice retrapped down to 5th September, and another first-winter Bonelli's Warbler was caught there five days later, making the sixth British record. Fair Isle had a "corner" in Arctic Warblers (*Ph. borealis*) with three separate birds, all trapped, on 1st, 8th and 17th September. There were sight records of Greenish Warblers (*Ph. trochiloides*) at the Crumbles (Sussex) on 11th September, at Holkham (Norfolk) on 12th October and at Cape Clear Island during 17th-24th October and 30th October-1st November.

Yellow-browed Warblers (*Ph. inornatus*) were more frequent than in 1958 and the scatter of records was unusually wide. The first appeared at Cape Clear on 19th September, and the next at Folkestone (Kent) on the 22nd. Fair Isle had single ones on 26th September and 2nd-5th, 12th and 14th October. More surprising were the several at Sandwich Bay (Kent) where no fewer than 4 were trapped or seen between 27th September and 4th October. There were single birds at two widely-separated observatories, Skokholm (Pembrokeshire) and the Isle of May (Fife), on 2nd October; and a well-known English migration-student, returning to this country after a long sojourn in the United States, was welcomed home by a Yellow-browed Warbler which alighted on R.M.S. *Queen Elizabeth* between Cherbourg and Southampton on 12th October.

Barred Warblers (*Sylvia nisoria*) continued to flow into the country during September, and this species was of daily occurrence at Fair Isle until the 25th (with up to three on some days in mid-month), by which time it was estimated that no fewer than 30 birds had passed, 16 having been trapped. Foula (Shetland), 45 miles north-west of Fair Isle, had a good spell at the beginning of the month with two on the 2nd and four on the 3rd, and two over the next two days. Along the eastern seaboard there were two at the Isle of May on 11th September and one on the 16th; two at the Farne Islands (Northumberland) on the 8th and another from the 20th to the 25th; single birds at South Gare on the Yorkshire side of Teesmouth on the 13th and 20th; two or three daily at Spurn during the 3rd-9th, two being

retrapped after a week's stay; three at Gibraltar Point on the 1st and 3rd and others on the 15th and 20th, one remaining to the 27th; one at Holme (Norfolk) on the 6th; single birds at Cley (Norfolk) on the 2nd, 4th, 5th and 11th, and two on the 7th; and one at the Naze (Essex) on the 6th. More remarkable were the Barred Warblers on the south coast, some of which have already been mentioned (*Brit. Birds*, 52: 319): to these should be added one at the Crumbles (Sussex) on 10th September. In the Irish Sea there were single Barred Warblers at the Calf of Man on 21st August and at Bardsey from the 23rd to the 28th, at Grune Point (Cumberland) on 6th September and at Great Saltee on the 21st. Finally, there was a late bird at Spurn on 10th October. It is hardly likely that fewer than 70 individuals are accounted for by these records.

RED-BREASTED FLYCATCHERS

Last year we thought that the autumn season would long be remembered for the large number of Red-breasted Flycatchers (*Muscicapa parva*) brought to this country in the easterly anticyclonic weather of early and mid-September (*Brit. Birds*, 51: 433-434; 52: 360-363), but that memory is already dimmed by the even more phenomenal score in 1959. It may well prove that nearly twice the number have been recorded, bringing the total for the two seasons to well over the hundred mark. There was a bigger movement through Heligoland, the German North Sea bird observatory, than in any previous year, over 20 being ringed in September, eight of them in one day, the 14th, which with the days on either side was the peak period there. Red-breasted Flycatchers were also unusually numerous in Denmark and in southern Sweden: Falsterbo had three on the 15th-16th, two on the 24th, and single birds on a number of dates.

Along the east coast of Britain the best period was 17th-19th September and Spurn (Yorkshire) had a bigger share of the Red-breasted Flycatchers than any other station: by the end of October the tally there was 10 trapped and 4 or 5 others seen. After the one in Essex at the end of August (*Brit. Birds*, 52: 319), Spurn followed with one on 4th September and two on the 6th when there was also one at Blakeney Point (Norfolk). Between then and the peak in the third week of the month single birds appeared at Fair Isle, the Isle of May, Holy Island (Northumberland), Flamborough Head (Yorkshire), Spurn, Gibraltar Point (Lincolnshire) and Cley (Norfolk). The peak on the 19th produced no less than 4 at Spurn and two at Holme (Norfolk), and on the next day an adult male was reported aboard S.S. *Britannia* in the North Sea at 54°30′N., 4°45′E. The 26th saw the start of another influx at Fair Isle which increased to 4 next day, and two reached the Isle of May on the 29th.

Meanwhile, as happened in 1958, a number penetrated to the Irish Sea and the south-west, appearing slightly later than on the east coast. Great Saltee (Co. Wexford) was visited by Red-breasted Flycatchers on the 10th-11th, 20th-21st and 27th, St. Agnes (Isles of Scilly) had single birds on the 20th and 23rd, and Cape Clear Island (Co. Cork) one on the 25th and two next day. A lost bird flew aboard the ocean weather-ship at "Juliett" 400 miles west of Ireland on the 16th, disappearing the following day.

In October Red-breasted Flycatchers were seen at Fair Isle on the 2nd, 3rd (2), 6th, 19th and 20th, while others were scattered down the east coast at Hartlepool (Co. Durham) on the 2nd and 6th, at Flamborough on the 1st, at Spurn on the 4th (2), 5th, 7th, 9th and 17th, at the Isle of May on the 4th (1) and 6th (2), and at Shellness on the Isle of Sheppey (Kent) on the 5th-6th. Even remote North Rona, 50 miles north-west of Cape Wrath, now came into the picture with one during the 10th-13th. Some continued to infiltrate the Irish Sea region, and single birds were recorded at Skokholm (Pembrokeshire) on the 5th; at Cape Clear during

the 6th-11th; at Bardsey (Caernarvonshire) on the 10th, on the night of the 10th/11th (killed at the light) and on the 11th; at St. Agnes on the 11th and 20th-21st; at Lundy (Devon) on the 12th-14th; and at Great Saltee on the 1st-2nd and 18th.

PIPITS, SHRIKES AND STARLINGS

As usual, Portland (Dorset) stole the limelight with Tawny Pipits (*Anthus campestris*), having two on 5th-6th September, a third on the 11th and two more on the 28th. There were also single ones at Whitstable (Kent) on the 4th, at the Crumbles (Sussex) on the 9th and at Cape Clear Island on 9th October. Cape Clear Island also reported a Richard's Pipit (*Anthus novaeseelandiae richardi*) on 14th October, while others appeared at Sandwich Bay (Kent) on 1st October, at West Huntspill (Somerset) from the 4th to the 18th, and at Fair Isle there were three on the 8th. It was at West Huntspill that a Richard's Pipit wintered from December 1958 to February 1959 (*Brit. Birds*, 52: 32, 68, 103).

Rather few Red-backed Shrikes (*Lanius cristatus collurio*) appeared on the east coast during September and, for example, only one was recorded on Fair Isle, on the 11th. Other scattered reports came from Northumberland, Norfolk, Suffolk, Essex and Kent. A more remarkable occurrence was the one at Tory Island (Co. Donegal) on the 12th. Nor was it a good September for Woodchat Shrikes (*L. senator*) and, apart from the one at Great Saltee from 30th August to 9th September already mentioned (*Brit. Birds*, 52: 320), the only observation reported was a young bird at Portland (Dorset) on 9th September. This was accompanied by an adult female Red-backed and followed next day by a problem red-tailed shrike which clearly belonged to one or another of the eastern forms of *L. cristatus* (of which *isabellinus* and *phoenicuroides* are representatives). There was also a late Red-backed Shrike at Portland on 12th October. The first Great Grey Shrikes (*L. excubitor*) of the winter were reported from Blakeney Point (Norfolk) and the Isle of May (Fife) on 4th October and others during the month included one at Selsey Bill (Sussex) on the 25th

An immature Rose-coloured Starling (*Sturnus roseus*) appeared at Portland Bill on 6th September, and during the second and third weeks of October an adult was seen several times in the Nottingham area.

WAXWINGS

Most people will by now know that yet another invasion of Waxwings (*Bombycilla garrulus*)—the fourth in three years—has taken place. An outline of its progress will be given in our next summary, but as the first ones appeared on 30th and 31st October we must make brief mention of them here. The first reports of all came from Dornoch (Sutherland) and Sheringham (Norfolk) on the 30th, and the next day these birds were noted in Aberdeenshire, Angus and East Lothian, as well as flocks of 14, 17, 27, 20-30 and 50 at five localities in Norfolk. During November Waxwings were observed in most east coast counties and also in west and south-west Scotland, north-west England and down to Somerset. In some parts of the country, particularly Scotland, the impression is that this may be the largest invasion of the recent four.

FINCHES AND BUNTINGS

Among finches, the identification of a Serin (*Serinus canarius*) at Cape Clear Island (Co. Cork) on 4th October is specially interesting. Three Arctic Redpolls (*Carduelis hornemanni*) are reported to have reached Hilbre Island (Cheshire) on 16th October. Earlier, from 29th August, there had been an invasion of Greater

Redpolls (*C. flammea rostrata*) at Foula and Fair Isle in Shetland and the mid-September numbers exceeded even those of 1955 (see *Dansk Orn. Foren. Tidsskr.*, 50: 125-133). The first Scarlet Grosbeak (*Carpodacus erythrinus*) reached the Isle of May (Fife) on 28th August. There were then two at Fair Isle on 1st-2nd September, and one at Foula during the 2nd-4th with two next day. More unusual was the one which was caught in a mist-net and also watched at Benacre (Suffolk) during the 2nd-4th, and afterwards Fair Isle had further visitors during the 7th-10th, on the 15th and during the 18th-25th. A Northern Bullfinch (*Pyrrhula p. pyrrhula*) was seen at Fair Isle on 22nd October.

Crossbills (*Loxia curvirostra*) continued in evidence at many places throughout September and only a few of the reports can be mentioned (*cf. Brit. Birds*, 52: 280, 319). Particularly interesting were 4 at Skokholm (Pembrokeshire) on 1st September, 4 on Foula during the 2nd-6th, up to 4 at Fair Isle in the first half of the month, and small movements at St. Catherine's Point (Isle of Wight) on the 3rd and at Selsey Bill (Sussex) on the 5th-6th, 12th and 19th-20th.

Among the buntings were two reports of species not previously recorded in Ireland, one at each end of that country: Tory Island (Co. Donegal) produced a female Yellow-breasted Bunting (*Emberiza aureola*) on 18th September and Cape Clear Island (Co. Cork) a male Rustic Bunting (*E. rustica*) on 9th October. A Rustic also appeared at Fair Isle on 15th October, and Little Buntings (*E. pusilla*) were seen there on the 17th and from the 19th onwards. Previously, in late August and early September, there had been four or five Little Buntings at Cape Clear (*Brit. Birds*, 52: 319), and birds seen again from the middle of September to 11th October (two) were probably from the same party which had joined with a local finch and bunting flock. There were also single Little Buntings at the Isle of May on 17th September and at the lighthouse on Bardsey (Caernarvonshire) on the remarkable night of 10th/11th October already mentioned. Other buntings included a male Red-headed (*E. bruniceps*) at Great Saltee on 22nd September, and it is worth mentioning that a bird of this species was also seen at Cap Gris Nez, France, on the 24th.

There were not so many Ortolans (*E. hortulana*) as in 1958, and they were apparently entirely absent from the east coast except at Cley (Norfolk) where up to two were recorded on 2nd-3rd, 11th and 18th September. After the late August influx in the south Irish Sea region (*Brit. Birds*, 52: 319), a first-winter male at Portland on 6th September was quickly followed by one at St. Agnes during the 7th-10th; Cape Clear had an adult female during the 10th-12th; there were then two birds at Portland on the 11th, an adult male at Pagham Harbour (Sussex) on the 14th and occurrences at St. Agnes and Skokholm on the 18th. A very late bird was the adult male at Lower Hope Pools (North Kent) on 26th October.

It was a better autumn than most for Lapland Buntings (*Calcarius lapponicus*), numbers in the north being higher in early September than at any time since the big invasion of 1953 (*Brit. Birds*, 49: 6-25). There were also perhaps more than usual in north Norfolk by the middle of September, while the species was noted in Sussex on the 20th and 23rd and birds reached St. Agnes at about this time. Other places, however, from Yorkshire to Kent reported none until the first week of October, and Portland Bill (Dorset) not until the end of that month. In September there were scattered records in the west at Cape Clear, Skokholm and the Calf of Man, and one at Shotton Pools (Flintshire) on 25th October is also sufficiently unusual to be worth mentioning.

Finally, there was an unusual influx of Twites (*Carduelis flavirostris*) in south-east England (Sussex, Kent and Essex) between mid-October and early November, and movement of Siskins (*C. spinus*) was widely reported during October. We hope to give fuller details of these features in our next summary.

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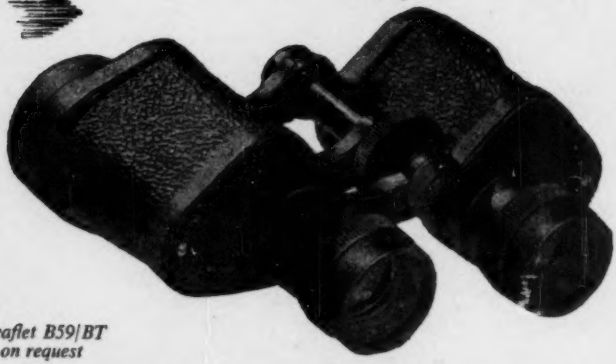

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